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ABSTRACT

This report reviews activities of a research project having the following objectives: identify selected personal characteristics of Iowa vocational agriculture students; determine how important students thought their vocational agriculture supervised occupation experience (SOE) was in developing occupational abilities; and determine how important students thought selected factors were in developing their SOE. The list of thirty-eight occupational abilities studied are presented, as well as a list of eighteen factors studied. A twenty-eight-page review of literature is presented first, followed by a description of the methodology for sampling, data collection (three-part questionnaire administered to a statewide sample of 300 senior high school students), and analysis of data. Findings are outlined in three sections: (1) personal characteristics of students in terms of types of SOE of students, occupational plans, educational plans, home locations of students, and years of vocational agriculture; (2) importance of developing occupational abilities; and (3) importance of factors in developing SOE. Sections 2 and 3 describe data analysis in terms of last type of SOE, occupational plans, educational plans, and home location. Conclusions are presented and recommendations include the following: The type of occupational abilities a student desires to develop should be considered in developing an SOE program, and instructors should include in their program of study instruction on selecting, planning, and conducting SOE for beginning vocational agriculture students. (BL)

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A Study of
Supervised Occupational Experience Programs of
Iowa Vocational Agriculture Students

by

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

Vocational agriculture has been added to the curriculum of many high schools to equip students with knowledge and skills needed for entry into agricultural occupations. Calhoun and Finch (11, p.213) suggested that contemporary vocational agriculture programs should focus on:

> (a) preparation and advancement in any occupation involving knowledge and skill in agriculture; (b) occupational exploration, guidance, and counseling; and (c) development of abilities essential for effective citizenship.

Pursuant to the accomplishment of these goals, vocational agriculture programs have been designed with three components, classroom and laboratory instruction, supervised occupational experience, and FFA activities. Many teachers recognize the supervised occupational experience (SOE) of their students as the foundation of their vocational agriculture programs. SOE, defined as the outside of class performance of the tasks required by workers in agricultural occupations for which systematic instruction and supervision are provided, allows students to learn through actual performance of tasks in a work setting. Occupational experience in real settings offers student learning experiences which cannot be duplicated in the classroom (14). The student's home, a school laboratory, a farm, or a community business may provide the opportunity for the student to participate in planned activities under the supervision of the teacher, parents, employer, and/or others.

The viability of supervised occupational experience to prepare students for agricultural occupations is supported by Woodin (51, p.27) who noted that:

> It appears that vocational agriculture during the next decade will introduce a greater variety of occupational experience to prepare students for a greater variety of agricultural

occupations. At the same time, the importance of this experience as a part of the total preparation of the student is likely to increase.

Statement of the Problem

Students with diverse educational plans, occupational plans, and places of residence enroll in vocational agriculture (8, 10). Such differences among students should be considered in developing SOE programs to provide students with individualized learning in agriculture. A knowledge of how students with different characteristics perceive the importance of their SOE in developing occupational abilities, and a knowledge of how important programatic and environmental factors are in developing SOE programs are needed to provide a basis for developing vocational agriculture SOE programs and supportive curriculum materials.

This study was designed to identify selected personal characteristics of Iowa vocational agriculture students; to determine how important students thought their vocational agriculture SOE was in developing occupational abilities; and to determine how important students thought selected factors were in developing their SOE.

Objectives of the Study

The specific objectives of this research were to:

1. Identify the types of SOE obtained by Iowa high school vocational agriculture students.
2. Identify the occupational plans of Iowa high school seniors enrolled in vocational agriculture.
3. Identify the educational plans of Iowa high school seniors enrolled in vocational agriculture.
4. Identify the place of residence of Iowa high school seniors

enrolled in vocational agriculture.

5. Determine if significant relationships exist between selected personal characteristics of students and students' last type of SOE.
6. Determine if there are significant differences in the perceived importance of SOE in developing occupational abilities among vocational agriculture students grouped according to their last type of vocational agriculture SOE.
7. Determine if there are significant differences in the perceived importance of SOE in developing occupational abilities among vocational agriculture students grouped according to their occupational plans.
8. Determine if there are significant differences in the perceived importance of SOE in developing occupational abilities among vocational agriculture students grouped according to their educational plans.
9. Determine if there are significant differences in the perceived importance of SOE in developing occupational abilities among vocational agriculture students grouped according to their place of residence.
10. Determine if there are significant differences in the perceived importance of selected factors in developing SOE among vocational agriculture students grouped according to their last type of vocational agriculture SOE.
11. Determine if there are significant differences in the perceived importance of selected factors in developing SOE among vocational agriculture students grouped according to their occupational plans.

12. Determine if there are significant differences in the perceived importance of selected factors in developing SOE among vocational agriculture students grouped according to their educational plans.
13. Determine if there are significant differences in the perceived importance of selected factors in developing SOE among vocational agriculture students grouped according to their place of residence.

Occupational Abilities Studied

The occupational abilities included in this study are as follows: (Procedures followed in selecting these abilities are described in the Methodology section.)

1. Produce animals or animal products.
2. Use business practices in an off-farm agricultural occupation.
3. Recognize employment opportunities in agriculture.
4. Realize that everyone can make a contribution to their occupation, family, community, and nation.
5. Participate in activities to develop leadership skills.
6. Participate in the development of policies and programs affecting agriculture.
7. Produce crop products.
8. Use equipment in an off-farm agricultural occupation.
9. Use animal science information in an off-farm agricultural occupation.
10. Use information about agricultural occupations in making employment plans.

11. Establish and maintain working relationships with others.
12. Participate in activities and organizations that improve agriculture and the community.
13. Market animals or animal products.
14. Use plant and soil science information in an off-farm agricultural occupation.
15. Handle and process farm products.
16. Recognize my abilities, talents, and interests in making employment plans.
17. Communicate effectively.
18. Finance farm operations.
19. Recognize and solve problems that develop in an agricultural occupation.
20. Identify and use new or improved practices in an agricultural occupation.
21. Explain the importance of agriculture.
22. Use the services of agencies and organizations in securing employment.
23. Appreciate the importance of honest work.
24. Develop acceptable personal and work habits.
25. Use buildings and equipment in farm operations.
26. Create and/or maintaine a favorable home environment.
27. Provide supplies and services to farmers.
28. Follow written directions and regulations.
29. Determine the opportunities for self-employment.
30. Market crops products.
31. Use labor, land, money, and other resources in farm operations.

32. Apply and interview for a job.
33. Maintain customer relations.
34. Conserve soil, water, and other natural resources.
35. Operate an off-farm agribusiness.
36. Develop businesslike relationships with others.
37. Utilize business policies and procedures.
38. Maintain and use records and reports.

Factors Studied

The programatic and environmental factors considered in this investigation are as follows: (Procedures followed in selecting these factors are included in the Methodology section.)

1. My FFA chapter activities.
2. My vocational agriculture classes.
3. My high school classes (excluding vocational agriculture.)
4. The goals established for my supervised occupational experience program.
5. The agreement developed for my supervised occupational experience program.
6. The help given to me by my vocational agriculture teacher(s).
7. My parents.
8. My relatives (excluding parents).
9. The records that I kept on my supervised occupational experience program.
10. People working in agricultural businesses in the community (excluding parents and relatives).
11. County extension and/or 4-H personnel.

12. Farmers in the community (excluding parents and relatives).
13. The guidelines and rules of the school and vocational agriculture department for SOE.
14. The evaluation activities carried out by myself, my teacher(s), my employer(s), or others.
15. The wages and/or profits earned from my supervised occupational experience.
16. My fellow vo-ag students.
17. The help given to me by my vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program.
18. The training or experience plan developed for my supervised occupational experience program.

REVIEW OF LITERATURE

A great amount of writing has been done to communicate the importance of supervised occupational experience as a component of vocational agriculture. Planned participation by students in occupations is recognized by agricultural educators as the ultimate in the teaching and learning process. However, the literature is almost void of research pertaining to the abilities that students develop through their supervised occupational experience in vocational agriculture. Only limited attention has been given to factors that stimulate the development of supervised occupational experience as perceived by students.

The literature cited in this publication is presented in four major sections: (1) the place of supervised occupational experience in vocational agriculture, (2) the nature and types of supervised occupational experience, (3) planning and conducting supervised occupational experience programs, and (4) evaluating supervised occupational experience programs.

The Place of Supervised Occupational Experience in Vocational Agriculture

The Smith-Hughes Act of 1917 provided for the first national promotion of vocational education in agriculture. As a result of this legislation, vocational agriculture has become a significant program in many American secondary schools. This vocational education legislation directed vocational agriculture in the preparation of people for entry and advancement in farming occupations for forty-six years.

In 1963 new vocational education legislation was passed to improve and expand vocational education opportunities in the nation. This legislation challenged vocational agriculture to prepare people for work in

the following occupational areas: (1) agricultural production, (2) agricultural supplies and services, (3) agricultural mechanics, (4) agricultural products, (5) ornamental horticulture, (6) agricultural resources, (7) forestry, and (8) other agricultural occupations and professions.

Iowa's projected need for people in agriculture is shown by the following labor demand figures for agriculture reported in Iowa State Plan for the Administration of Career Education (44, p. 2):

Agriculture Occupational Area	1975 Total Employment	Project Expansion and Replacement Needs	
		1976	1980
Agricultural Production	131,588	4,285	4,179
Agricultural Supplies & Services	84,141	725	890
Agricultural Power Machinery	4,169	270	326
Farm Products	5,805	50	65
Ornamental Horticulture	4,738	183	220
Agricultural Resources	854	42	98
TOTAL	231,295	5,555	5,778

These data indicate that in 1976, 77 percent of the new Iowa job opportunities in agriculture were in farming. The other 23 percent were in non-farm agricultural occupations. Employment opportunities in production agriculture are expected to decrease to 73 percent while non-farm agricultural job opportunities increase to 27 percent of the 5,778 projected expansion and replacement jobs in 1980.

Through the years, supervised occupational experience in agriculture has proven to be an effective learning procedure for students. Farm practice, supervised practice, supervised farming program, work experience program, supervised work experience, supervised occupational experience program and other terms have been used to refer to this type of learning

experience. Supervised occupational experience (SOE) in agriculture is a series of learning experiences which is part of the vocational agriculture program. It provides a means for students to participate in an agricultural occupation where they can apply agricultural knowledge and skills, and develop additional competencies in agriculture. Such experiences may utilize facilities at the student's home, on a farm, at school, or in a community business. A student's supervised occupational experience may include some or all of the following types of experiences: (1) ownership, (2) employment, and (3) responsibilities.

The following statements made in the Office of Education publication, Developing Supervised Occupational Experiences in Agriculture (48, p. 2) are helpful in understanding the meaning of supervised occupational experience:

1. In general, occupational experience is the students' physical participation in one or more agricultural occupations. It is participation in performance of the required tasks and in their related responsibilities. This is the definition commonly accepted by students, citizens, cooperating farmers and other agricultural businessmen; it is the road to competency for the individual.

2. Occupational experience is a part of the instructional program. It includes a sequence of learning experiences for students developed and guided under an instructor's leadership. This view is the educator's concept of occupational experience.

3. Ultimately, occupational experience is learning. It is the discovery of interests and abilities in relation to agricultural employment. It is the development of skills, abilities, and understandings. It is change in the individual gained by his participation in agriculture.

Binkley (4, p. 153) described supervised occupational experience programs as "...the foundation stone of the instructional program in vocational agriculture. Experience programs are at the center of the battle; not a skirmish on the fringe."

Purpose of Supervised
Occupational Experience Program

Supervised occupational experience should be individualized for each student and combined with group in-school agricultural instruction and FFA activities to form an effective educational program called vocational agriculture.

The 1917 vocational education legislation prescribed practical experience in agriculture under the teacher's supervision as an integral part of the vocational agriculture curriculum. Wiegers (50, p. 274) described a basic assumption underlying this mandate when he wrote:

> ...agriculture cannot be taught effectively in isolation from actual practice...persons enrolled in the program need educational assistance in performing agricultural activities...in order to secure desirable outcomes, actual farm practice must be extended over a reasonable length of time such as a production cycle.

Framers of the 1917 legislation believed that persons could not be properly trained for farming nor farm employment unless they were given participating experience in farming under proper supervision. In 1950, Spanton (41, p. 185) wrote that:

> This attitude regarding the necessity for participating experience in vocational agriculture is psychologically sound, and can not be questioned by anyone who recognizes that the one big objective of a program of vocational education in agriculture is to develop ability, systematic training, and participating experience, for greater proficiency in farming occupations.

In 1944, Ross (37, p. 1) described supervised occupational experience as an integral part of vocational agriculture, not an appendage when he stated that: "Such experience aids the individual student in developing abilities, acquiring skills, and solving real farming problems on his own level, and should lead to a definite goal, satisfactory establishment in farming."

Almost twenty years later, after the passage of the 1963 Vocational

Education Act, Thompson (47, p. 31) wrote that:

> The primary purpose of a supervised program for a high school student enrolled in vocational agriculture is to provide experiences that will contribute to the development of the abilities needed for efficiency in the type of work in agriculture in which the student is likely to engage. It provides an opportunity to develop deeper understanding through application of practice and principles in actual situations.

Bender and Taylor (3) reported in 1974 that supervised occupational experience should provide specialized educational experiences, aid in establishment in an occupation, and contribute opportunities for earnings.

Bishopp (6) presented the following as the major objectives of supervised occupational experience programs in vocational agriculture: (1) to learn by doing, (2) to develop student cooperation and interest, (3) to promote parent-school relationships, and (4) to provide occupational guidance. These objectives were written in 1949; but, are very much in keeping with educational principles embraced today.

Since supervised occupational experience is a component of vocational agriculture, it should contribute to the accomplishment of the objectives for vocational agriculture. The current major program objectives established in 1965 by the U.S. Office of Education (49, pp. 5-9) for vocational agriculture are as follows:

1. To develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture...

2. To develop agricultural competencies needed by individuals engaged in or preparing to engage in agricultural occupations other than production agriculture...

3. To develop an understanding of and appreciation for career opportunities in agriculture, and the preparation needed to enter and progress in agricultural occupations...

4. To develop the ability to secure satisfactory placement and to advance in an agricultural occupation through a program of continuing education...

5. To develop those abilities in human relations which are essential in agricultural occupations...

6. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities...

Contributory objectives were also formulated for each of the above objectives to emphasize the abilities which should be developed.

Some of the values of supervised occupational experience in vocational agriculture are summarized below:

1. Extends classroom instruction to the farm, laboratory, home or agribusiness.
2. Encourages use of approved practices.
3. Provides for development of occupational skills.
4. Promotes closer relationship between student and teacher.
5. Promotes cooperation between parents and teacher, and between teacher and agribusiness people.
6. Makes effective teaching in a real life situation.
7. Helps students see the relevance of instruction.
8. Gives students experience in the business world.
9. Encourages students to learn to work with others.
10. Provides an avenue for students to grow into farming or other occupations requiring knowledge and skills in agriculture.
11. Provides opportunity to earn, save and use money.
12. Provides motivation for learning and promotes interest in agriculture.
13. Develops pride of ownership or employment, initiative, self-confidence, and managerial ability.
14. Provides an opportunity for contribution to improvement of the home, farm and family living.

15. Contributes to community improvement.
16. Develops opportunities for individualized instruction.
17. Provides basis for evaluating the effectiveness of vocational agriculture instruction.
18. Enhances the effectiveness of FFA activities.
19. Ties instruction in agriculture to an occupation and to people in agricultural occupations.
20. Allows students to recognize problems in farming or agribusiness jobs that can be solved in vocational agriculture classes (19, 35, 36).

The Learning Process

Learning is widely recognized as a process. The end product of learning is change in behavior. This change must come through a person's own activity or experience. In discussing the learning process and supervised occupational experience, Binkley (5, p. 24) wrote: "Experience is necessary in learning a vocation. We learn what we do; we learn it the way we do it... You can learn only what you do. Activity with little self in it produces but little learning."

Binkley (5, pp. 24-25) further stated that: "A very important thing affecting learning is the satisfyingness of the learning experience. Satisfyingness promotes learning in two ways: (1) it encourages more experience of the same kind, and (2) it adds to the intensity of the experience."

When supervised occupational experience is disregarded as an important means of learning in the vocational agriculture program, the results can be alarming. Newcomb (32, p. 176) wrote that such a situation "...has relegated the vocational agriculture program to an inferior

position and has placed students without acceptable occupational experience in a position of unsuccessful competition in the market place." The results of an Ohio research study by Neavill (31) revealed that vocational agriculture students with occupational experience programs in agriculture received significantly higher scores on criterion reference tests in the area associated with their program than students not having such experiences.

In 1975, McCracken (29, p. 182) wrote the following statement:

> A combination of classroom instruction and supervision of student experiences is essential. Neither instruction without practice nor practice without instruction is desirable. Teachers who develop applications of instruction through occupational experiences are increasing the probability that their students will learn more effectively.

The state of Arizona (2, p. 2) recognizes supervised occupational experience programs as being grounded in the following educational principles:

1. Programs of instruction should be directly related to employment opportunities determined by school officials in cooperation with occupationally concerned and competent individuals and groups.

2. The environment and facilities in which the student is prepared (trained) should duplicate as nearly as possible the conditions and environment of the occupations in which he will subsequently work.

3. The preparation should include practice in the same operations, the same tools and equipment, and the same types of managerial decisions as are to be found in the occupation.

4. Vocational Education is an integral part of the total program of education and should have relevance with prevailing employment requirements and responsibilities.

5. The student should be prepared in the mental and manipulative habits required in the occupation.

6. Training for an occupation is carried to the point of developing marketable skills, abilities, understandings, attitudes and work habits sufficient to enable the trainee to secure and progress in a job in that occupation.

7. The closer the time of the training to actual job entry, the more effective the training becomes.

The teacher is the key. The students' supervised occupational experience will be no better than the teacher of vocational agriculture. The instructor must understand and believe in the value of supervised occupational experience programs. Ross (37) observed that the teacher must be enthusiastic about students' plans for participation in agriculture. The teacher must be a good salesperson, informing school officials, parents, students, and the public of the value of supervised occupational experience programs. Peterson and McCreight (35, p. 245) described the responsibility of the teacher as follows:

> One of the first resquirements of an agricultural educator, is to have a real dedication and commitment to a supervised occupational experience program for every student. The "heart and backbone" of a vocational agriculture curriculum is the supervised occupational experience program. It has been stated that education is vocational when it is taught in relation to actual work and observation of specific occupations. From these actual work and observation experiences come the problems for class discussion. Without occupational experience programs, vocational agriculture will likely evolve to a "bookish mere classroom only experience" with abstract applications. The integral relationship of the FFA awards programs to the occupational experience program will also be lost. The valuable year round instructional program is also lost without supervised occupational experience programs. Consequently, occupational experience programs are really the key. A supervised occupational experience program should be required of every student enrolled in a truly vocational agriculture course.

Kahler (23) in a study of instructional problems of Iowa vocational agriculture teachers discovered that the most important activities related to supervised occupational experience programs performed by teachers are: (1) making on-farm visits to supervise program activities, (2) teaching students in record keeping, and (3) assisting employers in developing training program schedules to achieve the goals and objectives of students experience programs. The last two activities listed above in

addition to analyzing and using students occupational experience records were the activities related to supervised occupational experience that caused the teachers the most difficulty.

Supervision is essential. Learning is not limited to desirable change in behavior. Doing something the wrong way tends to bring about wrong learning. Thusly, educational activities and experiences must be supervised to ensure that desirable learning (change in behavior) is taking place. Hammonds (19, p. 166) stated that:

> It is the teachers opportunity to direct the activities of the learners so as to produce the largest amount of the most desirable intended learnings and the smallest amount of undesirable learnings. Through supervision, he should be able to increase the quality of the performance and get a greater amount of experience where it is needed.

Because of the nature of some supervised occupational experience programs, some of the supervision must be delegated to an on-site supervisor. Such persons may be parents for a student with a supervised farming program on the home farm, or an employer for a student placed in an agribusiness. However, this does not eliminate the need for teacher supervision. Reasons for making supervisory visits by the teacher include the following:

1. See that supervised occupational experience programs are properly planned.
2. See that program plans are carried out.
3. Encourage the use of knowledge gained at school.
4. Show a special interest in the student's work.
5. Gain the support and cooperation of parents or employers.
6. Teach additional skills.
7. Provide timely advice.
8. Help solve problems.

9. Develop an incentive in the student to do things correctly.
10. See that program records are maintained.
11. Evaluate the work and progress of the student.
12. Collect ideas for in-school instruction.

These reasons for home and job visits were adapted from writings by Schmidt (38) in 1932; but have application for today.

Eicken (17) stated that, "The success of any supervised experience program at any age or educational level depends very much upon the philosophy of those charged with supervising the vocational experience program."

McCracken (29, p. 182) described the importance of teacher supervision when he stated:

> The success or failure of an occupational experience program for a student depends, to a large degree, upon the effectiveness of the supervision by the teacher. Effective supervision requires planned programs, instruction, so each student can succeed, and effective evaluation to insure that the plan has been accomplished.

Supervised occupational experience is a means whereby the instruction given in the classroom is extended into the community where it is applied by the student. Such application yields opportunities for further learning. Supervised occupational experience visits by the teacher are necessary to activate and direct this learning to ensure desired outcomes. The Iowa Department of Public Instruction recognized the role of the instructor in supervised occupational experience and wrote the following guideline regarding preparation and qualification of teachers: "The teacher of agriculture, although assigned to a school setting, is responsible for supervised occupational experience and educational leadership in the area of agriculture within the service area of the school district in which employed" (43, p. 7).

Nature and Types of Supervised Occupational Experience

Since the objectives for vocational agriculture were expanded by federal legislation in 1963, the nature and types of supervised occupational experience have also expanded.

From 1917 to 1963 supervised occupational experience that would lead students to enter and advance in farming occupations was prominent. Lamar (25) cited four types of programs that provide experiences related to farming occupations: (1) supervised farming programs, (2) farm placement programs, (3) farming experience on a school farm, and (4) a combination of the above three alternatives.

In 1965, Pearce (34, p. 60) made the following observations about the inadequacy of farming oriented supervised occupational experiences in meeting the needs of all vocational agriculture students:

> Society is in a state of continual change, yet many programs are basically no different than they were twenty years ago. Too many have failed to take into account the implications of changes, such as: (1) the decreasing opportunities to begin and advance in the vocation of farming;...(2) many of the individuals enrolling in agricultural programs are not from farms while others are not interested in farming as a vocation; (3) changing technology and advancing automation which has altered the make up of the demand of the labor force, and (4) recent legislation providing a broader perspective for the improvement of programs.

Pearce (34, p. 60) further stated that "the importance of agricultural training has not decreased by these changes. On the contrary, they indicate that agricultural training is more necessary than ever before."

During the 1960's and 1970's the vocational agriculture program in many schools has expanded to provide in-school instruction that would help prepare persons for occupations in agricultural supplies and services, agricultural products, agricultural mechanics, ornamental

horticulture, forestry, and agricultural resources in addition to agricultural production. This expansion has created a need to expand the types of supervised occupational experience alternatives for students. Eicken (17, p. 254) described the needed as follows:

> The concept of agricultural experience should be broad enough to meet the needs of all students enrolled...supervised occupational experience programs must relate directly to those physical and mental skills needed for the individual to function in a productive way in our society.

McCracken (29, p. 183) explained the need this way:

> There can be no adequate training in agricultural occupations that does not have its foundation in experience participation in the tasks for which the abilities are needed. Individuals in every group taught should have experience programs. What one practices, what he experiences, what he participates in, he learns.

Peterson and McCreight (35) identified five types of occupational experience programs that would provide alternatives for students enrolled in vocational agriculture during the 1970's: (1) supervised farming program, (2) supervised farm placement program, (3) supervised laboratory programs, (4) supervised cooperative agribusiness programs, and (5) supervised exploratory programs. A brief explanation of each is given.

Supervised farming program. This type of program provides an opportunity for ownership, self-employment, and management experiences. Historically supervised farming programs have been planned to include (1) productive farm enterprises or projects, (2) improvement practices, and (3) occupational or agricultural skills. It is designed for students to grow into farming. It is also recognized by some people as excellent agribusiness preparation (19, 35, 27).

Supervised cooperative farm placement. Students without resources for a supervised farming program may elect to develop competencies in

production agriculture through employment on a farm or ranch. However, labor laws and regulations must be observed in this type of program. The three phases of this type of program are: (1) farm placement, (2) improvement projects (on either the student's home or employer's farm), and (3) agricultural skills (5, 36, 46).

Supervised laboratory programs. This type of experience was originally limited to a school farm. But, today experiences may involve production projects using the school's farm, greenhouse, barn, or shop. Such experiences would occur outside of normal classroom and shop activities. Other phases of the program would involve improvement projects and agricultural skills (35, 25).

Supervised cooperative agribusiness programs. A good experience program in an off-farm agribusiness is made up of planned jobs and responsibilities in selected cooperating businesses. In this program students may be on released time from school or may work after school or during the summer months. Labor laws and regulations frequently restrict this type of program to students who are 16 years of age or older (35, 5, 36).

Supervised exploratory programs. This type of program may be a beginning experience for some vocational agriculture students. The program has three parts: (1) students are required to interview a number of employers and employees in agribusiness firms, (2) home improvement projects, and (3) occupational skills that may be production or agribusiness in nature (35).

In writing to students about vocational agriculture and the experiences they can gain, Hoover (20, pp. 33-34) stated that:

> Whatever your vocational choice may be, vocational agriculture has many ways of preparing you for that career. If you have not selected your vocation, vocational agriculture acquaints you with careers in which you may be interested. Some vocational

> agriculture departments use work experience. In work experience you get an actual opportunity to receive training on the job. Exploratory work experience, as used by some schools, provides an opportunity for you to "try out", some of the occupations in which you think you are interested.... The only factors which limit you in your preparation for an occupation are the time, interest, and effort you are willing to put in.

Planning and Conducting Supervised Occupational Experience Programs

Supervised occupational experience that provides maximum learning requires careful planning. The teacher of vocational agriculture must accept the responsibility to direct the planning. The purposes for planning students' supervised occupational experience programs may be summarized as follows:

1. To teach students to foresee probable conditions and problems and be prepared for them.
2. To provide a definite scheme for teaching students to analyze an enterprise or occupation.
3. To teach a student to recognize and evaluate improvement practices.
4. To enable the student to determine the possibilities for profit or income from an enterprise or business transaction.
5. To make more certain that students carry out jobs and experiences satisfactorily.
6. To enable in-school instruction to be more directed toward student needs, and thereby further escape informational agriculture instruction.

These purposes represented the thinking of a group of cooperating teachers of agriculture, state supervisors, and teacher educators (27). The

motivation for their group thinking about supervised occupational experience was that, "the real purpose of planning is to promote learning" (27, p. 57).

Johnson (22, p. 4) stressed the need for planning supervised occupational experience programs by using supervised farming programs as an example:

> The student must realize that to develop a long time farming program into a practical and sound farming business will require much time, thought, and work. Every individual farming program must have a well developed working plan from the beginning. The students must plan, study, and execute plans. Thinking through to a sound decision requires systematic study. This necessitates that the instructor offer individual, group, and class instruction, based largely on the farming programs of the students.

Preparatory Instruction

Miller (30, p. 147) emphasized the need to teach supervised occupational experience when he wrote:

> If supervised occupational experience is to maintain its rightful position along side the FFA, the agriculture mechanics shop, and the classroom instruction as keystones in the Vocational Agriculture program, it must be seen as content as well as process. More explicitly, S.O.E. must be taught, just as we assume we must teach Animal Husbandry, Crop Production, or Soils Management in order to insure that our students have the needed competencies. Furthermore, a great deal of this teaching must be group instruction, because there is so little time, with the increased number of classes, the increased class sizes....

Miller (30, pp. 147-148) stated that vocational agriculture teachers can justify teaching supervised occupational experience as a part of curriculum content because of the modern concept of supervised occupational experience which has evolved.

> It includes exploratory experiences, work experience in agribusiness, cooperative work-study, production projects, improvement projects, and supplementary practices. This is a concept broad enough to include opportunities for every student, boy or

> girl, farm or non-farm, to develop a comprehensive, individualized occupational experience program in the broad field of agriculture including production, marketing, processing, supply, and services. But the students need to see the "big picture" of opportunities in such a concept and be given class time and help in planning their programs.
>
> All students in Vocational Agriculture need to learn the "what", "why", and "how" of supervised occupational experience. There is inadequate time to do this via individual home visits; thus, group instruction becomes a mandate. Not just a few days but perhaps as much as six weeks is needed to establish the concept and help students identify the opportunities important to them and to prepare plans for becoming involved.

Teaching of supervised occupational experience should not be limited to one block of time or one class. Teachers need to develop a year-round pattern of activities designed to support a high priority on supervised occupational experience (30).

Instructional time in beginning vocational agriculture classes must be devoted to planning students occupational experience programs. Topics or units such as the following may be featured:

1. Value of supervised occupational experience programs.
2. Types of supervised occupational experience programs.
3. Orientation to agricultural occupations.
4. Sites for supervised occupational experience programs.
5. Budgeting for supervised occupational experience programs.
6. Setting goals for supervised occupational experience programs.
7. Making agreements for supervised occupational experience programs.
8. Developing experience plans for supervised occupational experience programs.
9. Keeping records for supervised occupational experience programs.

The following objective for supervised occupational experience was stated in the Iowa Curriculum Guide in Occupational Experience in

Agriculture (42, p. 1).

> Students completing instruction in the occupational experience program will have strengthened their interest in agricultural occupations and have developed abilities to (1) analyze their future employment opportunities in agriculture; (2) analyze the contribution of agriculture to the economy of the local community, state and nation; and (3) secure employment and perform successfully in an agricultural occupation.

Instructional units presented in the Guide (42) to accomplish this general objective were:

1. Planning a Career.
2. Locating an Agricultural Opportunity and Following an Occupation.
3. Orientation to an Occupation.
4. Importance of the Individual.
5. Legal Considerations - Farm and Non-farm.
6. Occupational Success.
7. Farming Programs and Personal Finance.

In 1967, an U.S. Office of Education publication included the following basic positions for such preparatory instruction:

> The students who make choices relative to their participation in agriculture are most likely to profit from their experience. Their choices are made from an approved list of alternatives or otherwise subject to the approval of the instructor (school) since occupational experience is a part of a planned instructional program. In advanced programs the student may be required to accept a specified type or area of participation as one condition for his enrollment. (48, p. 15)

> The day is past when most students in vocational agriculture came from farms and were regarded as ready to put new skills and knowledge to use. With more non-farm youth enrolled and more students obtaining experience through cooperating agricultural businesses, preparation for occupational experience gains in importance. It is a major responsibility of the teacher of agriculture to give learners instruction preparatory to their participation in agricultural occupations. (48, p. 28)

The following statements by Binkley (5) provide a rationale for

planning occupational experience programs:

1. "Only clear and definite plans are very meaningful. The ability to plan is, perhaps, more elementary than the ability to do. If you cannot plan a practice, you are not ready to carry it out. It is during the planning that most of the mental activity takes place (5, p. 207).
2. "Good planning helps insure at least a moderate amount of success in the first undertaking" (5, p. 69).
3. "Working out a satisfactory agreement will help you develop your business ability. A clear understanding at the beginning of your experience program helps to prevent misunderstandings later" (5, p. 534).

Phipps (36, p. 199) reported that:

> It is important to assure an understanding of the aims and purposes of supervised occupational experience programs with all persons concerned in the development of these programs. This is especially urgent in departments where unsatisfactory experience programs have been conducted due to lack of teacher-parent-pupil-employer understanding and to inadequate supervision by the instructor.

Stoker (45) described the teaching of students to plan supervised occupational experience as a challenge: We as teachers of vocational agriculture have a definite challenge in acquainting the students with the value and the need of a good strong educational and profitable supervised experience program. It then becomes the job of the teacher to help students develop this part of the vocational agriculture program.

Standards for Supervised Occupational Experience

An important step in quality control in an educational process is the setting of standards for the process. This step provides a framework for

selecting activities to meet the standards and for evaluating the effectiveness of activities in meeting the standards. Magill (27, p. 57) stated that:

> Standards are similar to the specifications for a building -- specifications proposing to satisfy accepted building principles as applied to that particular building. When the standards are met, good planning has been done. Those standards are only tentative, but there are never-the-less standards for the present.

Magill (27) further emphasized that an instructor who desired good student supervised occupational experience programs must see to it that standards are established and that such standards are met.

The U.S. Office of Education (48, p. 56) in a 1967 publication made the following statement about standards:

> Few states have specific standards for size or scope of student's occupational experience in agriculture. The differences in individuals and in learning opportunities favor a broad interpretation of what constitutes adequate experience. The standards used may relate to total student time devoted to occupational experience, investment in agriculture, and other factors. In many instances time may not be the best standard. Ideally, the standard is learning defined by occupational demands and student aspirations.

This implies that the local teacher with the assistance of others involved in the students' supervised occupational experience programs must write the standards at the local level for approval by local school authorities.

The U.S. Office of Education (48, p. 37) stated this basic position about student participation in an occupational experience program:

> Learning in a vocation peaks at the participating stage. Achievement is of adult character. Progress is measured in concrete terms, yet the learner's success can bring enduring satisfaction. Under the guidance of teacher, parents, and supervisors, he progresses in line with his interests and capacities. He both makes and takes a measure of himself in the world of work represented by his occupation.... The student's learning tasks in the participation stage are: (1) to

> utilize adult supervision and direction in work as a means to learning, (2) to develop and progress towards adult standards of performance in the occupation, and (3) to gain understanding of the social and economic forces influencing his work environment.

Evaluating Supervised Occupational Experience Programs

Management of learning through supervised occupational experience should include procedures for helping students interpret their experiences, and procedures the teacher can use in assessing the outcomes. It is frequently difficult for students to interpret their experiences and recognize their progress or learning. To help students recognize their achievements, the teacher can direct the students:

> (1) to compare achievements with goals set in the planning stage, (2) to consider contributions of occupational experience in agriculture to meeting needs, (3) to identify ways in which the experience in agriculture related to his personal development, and (4) to find the value in his experience for occupational, and educational planning (48, p. 46).

Evaluation should be used to not only improve the student's supervised experience program, but may also be used to improve the entire vocational agriculture department. The department can be evaluated by making an individual assessment of each student's supervised occupational experience program (37). Sledge (39) advocated that in vocational agriculture teachers can evaluate either (1) outcomes, results, effects; (2) process, method, procedures, and techniques; or (3) a combination of the foregoing. This implies that evaluation should occur during the planning and conducting stages as well as after an outcome or result has been realized. Desired change in behavior should be the criterion for evaluating outcomes.

Harold Matteson, reported in The Process of Evaluating Vocational

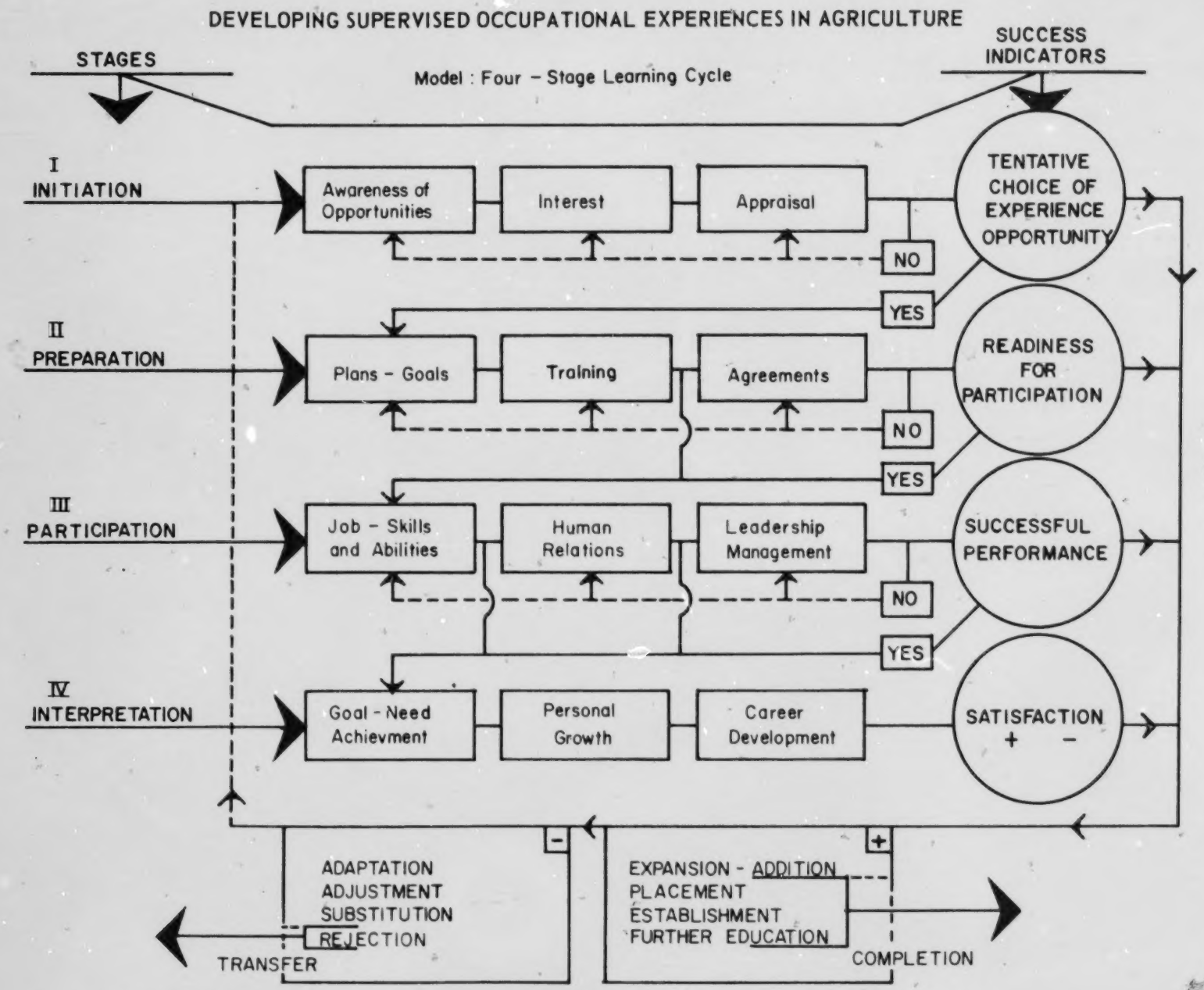
Educational Programs in Agriculture, (28, p. 21) that vocational educators are generally concerned with two types of evaluations: (1) evaluation for improving a program, and (2) evaluation for proving the value and importance of a program. One purpose for the latter type is to show the value of a program or a specific component of a program.

The U.S. Office of Education (48) recognized supervised occupational experience as both a product and a process of learning. The early product may be conceived in terms of student performance and satisfaction. Later, it may be evaluated in terms of the student's choice of entrance into, and success in, an agricultural occupation. This office further suggested that the supervised occupational experience as an educational process has four stages and four success indicators as shown in Figure 1 (48, p. 11).

This four-stage learning cycle suggests that the progress of the student can be assessed at various intervals in the learning process. The model denotes a series of related events in producing a product. The designers of the model explained it as follows:

> The model indicates that learners may go through the cycle more than once, i.e., they may have different elements in their occupational experience program. Dotted lines show that learners may be re-routed to different points in the cycle. Loops in connecting lines show possible shortening of the cycle or interaction of learning between steps. (48, p. 13)

Deyoe (15) suggested that evaluation should help the learner determine progress toward goals and make plans for further development. All persons affected by evaluation should share in the process. Smith (40) suggested that the student, the parents, the teacher and the school administrative officers should be involved in evaluation. Not only the



Source: U.S. Office of Education publication (48, p. 11).

Figure 1

tangible factors, skills, awards, dollars, should be assessed in evaluation, but also the less tangible factors, such as, what has the experience done for the student, or better yet, what has the student done for himself or herself through the experience?

Smith (40) suggested the following criteria for use in evaluating supervised experience programs:

1. Is it interesting to the student?
2. Does the program emphasize pertinent basic skills?
3. Does the program improve present conditions or introduce new practices?
4. Does the program show financial return to the student?
5. Does the program provide a basis for teaching appropriate competencies?
6. Is the program organized and operated in a business-like way?
7. Is the program leading to occupational entry or to additional training?

Byler (9) in a study of factors related to occupational decision-making of Iowa junior and senior vocational agriculture students, found that students living on farms perceived the value of their supervised occupational experience for the occupation they planned to enter to be significantly greater than the value perceived by off-farm students. However, related findings by Byler (8) revealed no significant difference in the perceived value of supervised occupational experience for the occupations which students planned to enter when students were grouped according to their educational plans upon graduation from high school.

Research completed by Byler and Kaas (10) revealed that Iowa

vocational agriculture students who planned to enter on-farm and off-farm agricultural occupations perceived their supervised occupational experience as valuable training for their future occupations. However, students planning to enter non-agricultural occupations perceived their supervised occupational experience as having only limited value in their future occupations.

In discussing guiding principles in evaluation Krebs (24, p. 239) wrote that: "Unless the agricultural education profession takes an active part in the development of criteria and procedures for evaluation, it is quite possible that the vocational agriculture program will be evaluated on the basis of "nose counts" only."

Crawford (13, p. 269) put it this way:

> Program evaluation in vocational agriculture is inevitable. If we don't evaluate someone else will. With the rapid changes occurring in agriculture and education, planning for evaluation is an aid to the improvement of instructional programs in vocational agriculture. We must evaluate to keep up to date with the agricultural technology changes. We must evaluate our students to determine if they are carrying out the practices they are being taught in the classroom and laboratories.

Miller (30) explained that the key activity in teaching supervised occupational experience is to reserve some time every marking period for student assessment of progress and for replanning.

Evaluating supervised occupational experience programs is not an easy task. To know whether or not a program is satisfying the needs of the students and to know whether or not it is accomplishing its desired purpose requires very careful assessment (21). Mackell (26) and Howard (21) suggested that an appraisal device which attempts to measure a student's progress in or the outcomes of supervised occupational experience programs should give attention to the following:

1. Scope of the program.
2. Student growth and improvement.
3. Student's records.
4. Student's long range goals and plans.
5. Earnings and capital gains.
6. Knowledge and skills developed.
7. Increasing interest in agriculture.
8. Development of confidence and leadership abilities.
9. Improvement made in the program on the experience site.

Outcomes from participation in agriculture may include:

1. Perfection of occupational skills.
2. Making a profit, building capital or earning money.
3. Obtaining a specific yield from a farm enterprise.
4. A general commitment to prevailing values involving work (48).

A U.S. Office of Education publication (48, p. 9) reported that:

> Specific outcomes indicate that the student reached a satisfactory level of performance. He attained the related knowledge necessary to this performance. Beyond performance is the satisfaction of the learner. Participation which helps the learner satisfy his needs is most effective. The satisfaction which an individual gets from his participation can lead to his continued effort to extend and improve his abilities. It can lead him to further his education, to employment, or establishment in farming. Finally, his participation contributes to a better understanding of himself in relation to the world of work. A lack of satisfaction from participation, on the other hand, may lead the individual to seek another field of endeavor.

Summary

Disman (16, p. 154) emphasized the importance of SOE when he wrote:

> One learns by doing. If students are given the opportunity to apply, to participate in applying, or to observe the application of the principles and practices to be learned. they will be more qualified to assume a job and become more responsible citizens on

> completion of high school. One of the basic principles of vocational education in agriculture is that schools provide for directed or supervised experience in agriculture.... Modern agriculture affords many employment opportunities for youth which can be utilized to build sound vocational education programs....

The soundness of supervised occupational experience programs was described in a publication by the Center for Vocational and Technical Education (12, p. 17):

> The supervised occupational experience program is the "heart" of vocational agriculture. It is designed to provide broad and varied opportunities for effective learning experiences. Leaders in education and psychology have indicated that the supervised occupational experience concept is sound educationally, economically, psychologically, and socially.
>
> Educationally
> The opportunities for firsthand experience that exist in such programs make for lasting and more complete learning. "Doing to learn" is the principle involved.
>
> Economically
> The opportunity to "earn and learn" through a supervised occupational experience program provides young men with limited earnings. Budgeting for future needs or contributing to the family income provide valuable experiences for the student. When the need for additional family income is present, many students can make a real contribution.
>
> Psychologically
> There are several reasons why supervised occupational experience programs are psychologically sound. Among these are:
> 1. Success builds self-confidence.
> 2. Increased earning power enables a student to grow realistically toward independence.
> 3. A feeling of accomplishment is attained.
>
> Socially
> The cooperative efforts of school (teacher), employer, parent, and student provide the basis for strong background in working with people. An important factor in social acceptance is financial success which, to some degree, is enjoyed by students enrolled in a supervised occupational experience program. Local banquets, organizational meetings, "recognition nights," etc., provide additional training in social maturity.

A meeting of professionals to identify future trends in sociology,

economics, and education and to discuss these trends in light of future program purposes and directions of agriculture and agribusiness education was held at Iowa State University in February, 1976. One of the implications for future developments and directions that emerged from this meeting was that agriculture and agribusiness education should expand occupational experience programs (1).

The following ten points written by Eicken (17, p. 253) are used to summarize the essentials which make a successful supervised occupational experience program for students in vocational agriculture:

1. Adequate instructional supervisional time, time and more time.
2. Adequately defined instructional agricultural business oriented objectives.
3. Adequately defined student agricultural business objectives (understood by the student).
4. A purpose for each supervisory call with strong instructional implications.
5. Leave a plan of action for the student to follow until the next supervisory call.
6. A rapport with cooperating agricultural business and parents of students with experience programs in production or agricultural business.
7. A business agreement and training plan cooperatively developed by the agricultural business trainer and/or the parent of production agriculture students.
8. A cooperative evaluation process with all those involved with the student's experience program.
9. A maintained detailed system of business records kept by students showing progressive occupational planning, progress, and an expression of profit and loss, or clearly defined environmental improvement accomplishments.
10. Academic credit commensurate with the training programs.

METHODOLOGY

The causal-comparative method as described by Borg and Gall (7) was followed in studying the relationships between the variables presented in the research objectives.

Population and Sample

The population for this study consisted of all Iowa high school students enrolled in vocational agriculture who were classified as seniors during the 1975-76 school year. To ensure that students from all areas of the state would be represented in the sample in proportion to their number in the population, proportional stratified random sampling procedures were used with 15 Area Education Agencies serving as the units for stratification. A 13 percent random sample of each strata produced a composite sample of 300 students.

Questionnaire

A three-part questionnaire was used in collecting the data:

1. Part I, Personal Data. This part gathered data pertaining to the types and order of students' vocational agriculture SOE and other personal variables.
2. Part II, Occupational Abilities. Occupational abilities which students in vocational agriculture may develop constituted this part of the questionnaire. The abilities were gleaned from the U.S. Office of Education publication, "Objectives for Vocational and Technical Education in Agriculture" (49). This publication listed six major program objectives for vocational agriculture and 43 occupational abilities that are essential for workers

in agricultural occupations. This list was reduced to 38 items through refinement and validation procedures. Students were asked to indicate on a nine-point scale how important they perceived their SOE to be in developing each ability. The importance scale ranged from "no importance" = 1 to "utmost importance" = 9.

3. Part III, Factors Important in Developing SOE. Factors deemed important in planning and conducting SOE were compiled through a review of related literature. Validation procedures reduced the list of factors to 18. Students were asked to indicate on a nine-point scale (described above) how important each factor had been in developing their SOE.

Informed consent statements were included that required the signature of students and the signature of parents when respondents were under 18 years of age.

A copy of the complete questionnaire is presented as Appendix A.

Data Collection

The questionnaire with a personalized cover letter was mailed to the home of each of the 300 selected students on April 19, 1976. Three follow-up mailings were made to non-respondents at two-week intervals. Each follow-up consisted of a personalized cover letter and a copy of the questionnaire. These procedures yielded a sixty-five percent return of properly completed questionnaires. A copy of each cover letter appears in Appendix B.

Analysis of Data

Frequency, crosstabs, and oneway subprograms of Statistical Package

for the Social Sciences (33) were used to analyze the data. Chi-square was used to test for significance relationship between each selected personal variable and students' last type of SOE. Oneway analysis of variance was used to test for significant differences between two groups or three groups of students on each of 38 abilities and 18 factors studied. When F-ratios ($P \leq .05$) were observed with three groups of students, the Scheffé Test was used to identify significant differences between all the possible pairs of group means. The .10 significant level, as recommended by Ferguson (18), was used with the Scheffé procedure.

FINDINGS

The findings are divided into the following sections:

1. Personal characteristics of students.
2. Importance of SOE in developing occupational abilities.
3. Importance of selected factors in developing SOE.

Sections two and three present four seperate data analyses with students grouped according to their: (1) last type of SOE, (2) occupational plans, (3) educational plans, and (4) home location.

Personal Characteristics of Students

This section describes selected personal characteristics of the research sample and tests for significant relationships between selected variables and the students' last type of SOE in vocational agriculture.

Types of SOE of Students

Table 1 shows the number and percentage of students who participated in different types of vocational agriculture SOE and their final SOE. Many of the students participated in more than one type of SOE while enrolled in vocational agriculture. Only 6.6 percent of the students indicated that they did not have SOE in vocational agriculture.

Eight out of every ten students who had occupational experience participated in a farming program while enrolled in vocational agriculture. However, only 23 percent of the respondents had farming programs as their last SOE. One-half of the students received occupational experience through farm placement and almost one-third participated in cooperative agribusiness placement. Thirty-seven percent of the students had one of these two types of cooperative programs as their final SOE in vocational

Table 1

Type of SOE students participated in and their final SOE in vocational agriculture

Type of SOE Program	Participation in SOE		Final SOE	
	No.	%	No.	%
Supervised farming	157	80	45	23.0
Cooperative farm placement	99	50	43	22.1
Cooperative agribusiness placement	62	32	30	15.1
Supervised laboratory experience	74	38	44	22.0
Supervised exploratory experience	31	16	21	11.2
No SOE	13	6	13	6.6
TOTAL	--	--	196	100.0

agriculture. School laboratories were used by almost 38 percent of the students to obtain occupational experience at some time in their agricultural studies. Almost one-fourth (22 percent) of the students used school laboratories to obtain their final SOE. Sixteen percent of the respondents reported participation in supervised exploratory experience programs as part of their vocational agriculture education. Eleven percent reported that this type of experience was their final SOE.

In analyzing the data pertaining to students last type of SOE, some of the types of SOE programs were combined. Students involved in ownership and management of farm enterprises (supervised farming programs) made up the "ownership SOE group". Students involved in cooperative farm placement programs or cooperative agribusiness placement programs constituted the "employment SOE group." Students with supervised laboratory experience programs provided through school farms, greenhouses and other school laboratories; and students with supervised exploratory experience programs

obtained by interviewing and observing employees in agribusiness firms were placed in the "responsibility SOE group."

Occupational Plans of Students

The occupational plans of the respondents are reported in Table 2. Almost one-half (48 percent) of the students reported that farming was their occupational choice. Another 13.1 percent of the respondents indicated that they planned to enter off-farm agricultural occupations.

Table 2

Chi-square test for relationship between students' occupational plans and their last SOE

Occupational Plans	FREQUENCY OF RESPONSE[a] Group 1 No.	Group 1 %	Group 2 No.	Group 2 %	Group 3 No.	Group 3 %	Totals No.	Totals %
Farming	22	51.2	31	44.3	31	50.0	84	48.0
Off-farm agri-business	5	11.6	9	12.9	9	14.5	23	13.1
Non-agriculture	16	37.2	30	42.8	22	35.5	68	38.9
Total	43	100.0	70	100.0	62	100.0	175	100.0
	Chi-square = 1.01 ns							

[a]Group 1 = students with ownership SOE; Group 2 = students with employment SOE; and Group 3 = students with responsibility SOE

Almost 39 percent (38.9 percent) of the respondents planned to seek a non-agricultural occupation upon completion of their formal education. The chi-square value of 1.01 was not significant at the .05 level, indicating that no significant relationship existed between students' occupational plans and their last type of SOE.

Educational Plans of Students

Table 3 presents the frequency and percentage responses to the question, "What are your educational plans upon completion of high school?"

Table 3

Chi-square test for relationship between students' educational plans and their last SOE

Educational Plans	FREQUENCY OF RESPONSE[a] Group 1 No.	%	Group 2 No.	%	Group 3 No.	%	Totals No.	%
Attend an area vocational school or community college	15	33.3	13	17.8	18	27.7	46	25.1
Attend a four-year college or university	10	22.3	10	13.7	14	21.5	34	18.6
Do not plan to attend college	20	44.4	50	68.5	33	50.8	103	56.3
TOTAL	45	100.0	73	100.0	65	100.0	183	100.0
	Chi-square = 7.90 ns							

[a]Group 1 = students with ownership SOE; Group 2 = students with employment SOE; and Group 3 = students with responsibility SOE

Slightly more than one-half (56.3 percent) of the students planned to become employed or self-employed and not attend college upon graduation from high school. One-fourth planned to attend an area school or community college compared to 18.6 percent who planned to attend a four-year college or university. The chi-square statistic was used to test for significant relationships between the educational plans of students and their last type of SOE. The chi-square value of 7.90 was not significant at the .05 level. Therefore, it may be concluded that no relationship existed

between students' educational plans and their last type of SOE.

Home Locations of Students

A significant relationship existed between students' home location and their last SOE as indicated by the chi-square value of 7.39 reported in Table 4. Eighty-five percent of the total respondents lived on a farm.

Table 4

Chi-square test for relationship between students' home location and their last SOE

Home Location	FREQUENCY OF RESPONSE[a] Group 1 No.	%	Group 2 No.	%	Group 3 No.	%	Totals No.	%
On farm	42	93.3	56	76.7	58	89.2	156	85.2
Not on farm	3	6.7	17	23.3	7	10.8	27	14.8
TOTAL	45	100.0	73	100.0	65	100.0	183	100.0
	Chi-square = 7.39*							

[a]Group 1 = students with ownership SOE; Group 2 = students with employment SOE; and Group 3 = students with responsibility SOE

*Significant at the .05 level

A majority of the students in all three groups lived on a farm. Almost one-fourth (23.3 percent) of the students who had employment SOE as their last SOE did not live on farms compared to only 6.7 percent of students with ownership SOE who did not live on farms.

Years of Vocational Agriculture

A significant relationship was found between the number of years of vocational agriculture completed and last type of SOE as indicated by the chi-square value of 6.32 reported in Table 5. Over three-fourths

Table 5

Chi-square test for relationship between students' years of enrollment in vocational agriculture and their last SOE.

Years enrolled in Vocational Agriculture	FREQUENCY OF RESPONSE[a] Group 1 No.	%	Group 2 No.	%	Group 3 No.	%	Totals No.	%
Less than four years	14	31.1	19	26.0	8	12.3	41	22.4
Four years	31	68.9	54	74.0	57	87.7	142	77.6
TOTAL	45	100.0	73	100.0	65	100.0	183	100.0
	Chi-square = 6.32*							

[a]Group 1 = students with ownership SOE; Group 2 = students with employment SOE; and Group 3 = students with responsibility SOE.

*Significant at the .05 level.

(77.6 percent) of the total respondents and over two-thirds of the students in each group had completed four years of vocational agriculture in high school. Only 68.9 percent of the students with ownership SOE had completed four years of vocational agriculture compared to 87.7 percent of the responsibility SOE group who had completed four years.

Importance of SOE in Developing Occupational Abilities

Analysis by Last Type of SOE of Students

The means, standard deviations, and F-ratios for the 38 occupational abilities when students were grouped according to their last SOE are reported in Table 6. There were significant differences among the three groups of students on the perceived importance of SOE in developing 13 of the 38 abilities. For 7 of the 13 abilities where significant differences

Table 6

Means, standard deviations, and analysis of variance for students' perceived importance of SOE in developing selected occupational abilities by last type of SOE

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Appreciate the importance of honest work	6.95 / 2.06	7.76 / 1.74	7.63 / 1.78	2.89
Develop acceptable personal and work habits	7.00 / 1.87	7.70 / 1.54	7.24 / 1.79	2.60
Establish and maintain working relationships with others	6.33 / 1.95	7.73 / 1.57	7.12 / 1.97	8.25** (2>1,3>1[c])
Maintain and use records and reports	6.77 / 1.89	7.09 / 1.94	7.38 / 1.80	1.39
Produce animals or animal products	7.33 / 1.90	6.45 / 2.65	7.16 / 1.79	2.79
Follow written directions and regulations	6.22 / 2.18	6.81 / 2.11	7.07 / 1.62	2.54
Identify and use new or improved practices in an agricultural occupation	6.46 / 2.00	6.54 / 2.04	6.98 / 1.72	1.25
Realize that everyone can make a contribution to their occupation, family, community, and nation	6.26 / 2.01	6.63 / 1.94	7.03 / 1.73	2.22
Conserve soil water and other natural resources	6.48 / 2.10	6.55 / 2.28	6.93 / 2.10	0.74
Use labor, land, money, and other resources in farm operations	6.60 / 2.33	6.26 / 2.37	7.13 / 1.86	2.72

[a]Occupational abilities are rank ordered for the total sample

[b]Group 1 = students with ownership SOE (N = 45); Group 2 = students with employment SOE (N = 73); Group 3 = students with responsibility SOE (N = 65)

[c]Group means differed significantly at the .10 level

*Significant at the .05 level

**Significant at the .01 level

Table 6.(continued)

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Use buildings and equipment in farm operations	6.77 / 1.92	6.26 / 2.53	6.93 / 1.76	1.86
Create and/or maintain a favorable home environment	5.95 / 2.34	6.73 / 2.15	6.95 / 2.21	2.84
Recognize employment opportunites in agriculture	6.11 / 1.88	6.75 / 1.98	6.70 / 1.59	1.96
Recognize my abilities, talents and interests in making employment plans	5.97 / 1.88	6.83 / 1.75	6.67 / 1.98	3.07* (2>1)
Recognize and solve problems that develop in an agricultural occupation	6.17 / 1.88	6.70 / 2.01	6.66 / 1.79	1.21
Communicate effectively	5.80 / 2.36	6.78 / 2.12	6.81 / 1.96	3.73* (2>1,3>1)
Market animals or animal products	7.00 / 1.62	5.95 / 2.75	6.84 / 2.12	3.79* (1>2,3>2)
Participate in activities to develop leadership skills	5.86 / 2.08	6.50 / 2.04	6.96 / 1.72	4.25* (3>1)
Determine the opportunities for self-employment	6.17 / 2.14	6.50 / 2.10	6.66 / 1.70	0.80
Explain the importance of agriculture	6.28 / 2.19	6.05 / 2.18	7.06 / 1.80	4.31* (3>2)
Participate in activities and organizations that improve agriculture and the community	5.82 / 2.09	6.51 / 2.10	6.80 / 1.72	3.33* (3>1)
Produce crop products	6.13 / 2.44	6.46 / 2.55	6.56 / 2.27	0.42
Develop businesslike relationships with others	5.82 / 1.88	6.72 / 1.99	6.33 / 1.74	3.17* (2>1)
Maintain customer relations	5.46 / 2.30	6.93 / 2.13	6.26 / 2.04	6.54** (2>1)
Finance farm operations	6.04 / 2.24	5.95 / 2.60	6.78 / 2.11	2.40

Table 6.(continued)

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Utilize business policies and procedures	5.42 / 1.99	6.22 / 2.35	6.35 / 1.81	2.95
Market crop products	5.53 / 2.67	5.88 / 2.36	6.27 / 2.08	1.35
Apply and interview for a job	5.44 / 2.38	6.31 / 2.52	5.80 / 2.25	1.96
Use information about agricultural occupation in making employment plans	5.60 / 1.87	6.08 / 1.97	5.87 / 1.97	0.85
Handle and process farm products	5.40 / 2.26	6.09 / 2.35	5.92 / 2.07	1.38
Provide supplies and services to farmers	5.31 / 2.36	6.04 / 2.21	5.93 / 1.96	1.71
Use business practices in an off-farm agricultural occupation	5.08 / 2.23	5.84 / 2.36	5.92 / 1.92	2.24
Use equipment in an off-farm agricultural occupation	4.60 / 2.41	6.26 / 2.16	5.66 / 1.92	8.29** (2>1,3>1)
Use the services of agencies and organizations in securing employment	4.73 / 2.39	5.56 / 2.29	5.98 / 1.92	4.35* (3>1)
Participate in the development of policies and programs affecting agriculture	4.93 / 2.16	5.41 / 1.99	5.87 / 2.03	2.84
Operate an off-farm agribusiness	4.66 / 2.12	5.69 / 2.34	5.29 / 1.93	3.19* (2>1)
Use animal science information in an off-farm agricultural occupation	4.64 / 2.45	4.97 / 2.46	5.50 / 1.79	2.10
Use plant and soil science information in an off-farm agricultural occupation	4.48 / 2.09	4.91 / 2.45	5.53 / 2.07	3.00* (3>1)

were found, the means were significantly higher for students with employment SOE than for students with ownership SOE. These abilities were: (1) establish and maintain working relationship with others; (2) recognize my abilities, talents, and interest in making employment plans; (3) communicate effectively; (4) develop businesslike relationships with others; (5) maintain customer relationships; (6) use equipment in an off-farm agricultural occupation; and (7) operate an off-farm agribusiness.

The means for students with responsibility SOE were significantly higher than the means for students with ownership SOE for the following abilities: (1) establish and maintain working relationships with others; (2) communicate effectively; (3) participate in activities to develop leadership skills; (4) participate in activities and organizations that improve agriculture and the community; (5) use equipment in an off-farm agricultural occupation; (6) use services of agencies and organizations in securing employment; and (7) use plant and soil science information in an off-farm agricultural occupation.

The means for students with ownership SOE and students with responsibility SOE were significantly higher than the mean for students with employment SOE for one ability, "Market animals or animal products."

The mean for the students with responsibility SOE was significantly higher than the mean for students with employment SOE on one ability, "Explain the importance of agriculture."

Almost all of the mean ratings for the three groups on the importance of SOE in developing occupational abilities were above the mid-point on a nine-point scale. There was similarity among the three groups in the occupational abilities with the highest means. The five abilities rated the highest by the ownership SOE groups were: (1) produce animal or

animal products, (2) market animal and animal products, (3) develop acceptable personal and work habits, (4) appreciate the importance of honest work, and (5) maintain and use records and reports.

The five occupational abilities with the highest means for the employment SOE group were: (1) appreciate the importance of honest work; (2) establish and maintain working relationships with others; (3) develop acceptable personal and work habits; (4) maintain and use records and reports; and (5) maintain customer relations.

The five abilities receiving the highest ratings by students with responsibility SOE were: (1) appreciate the importance of honest work; (2) maintain and use records and reports; (3) develop acceptable personal and work habits; (4) produce animals or animal products; and (5) use labor, land, money, and other resources in farm operations.

Analysis by Occupational Plans of Students

Table 7 presents the means, standard deviations, and F-ratios for the 38 abilities when students were grouped according to their occupational plans. There were significant differences among the three groups on the perceived importance of SOE in developing 9 of the 38 abilities. The means were significantly higher for students who planned to farm than for students who planned to enter off-farm agricultural occupations for eight abilities. These abilities were: (1) maintain and use records and reports; (2) produce animals or animal products; (3) use labor, land, money, and other resources in farm operations; (4) market animals or animal products; (5) produce crop products; (6) finance farm operations; (7) market crop products; and (8) determine the opportunity for self-employment.

The group who planned to farm had significantly higher means than

Table 7

Means, standard deviations, and analysis of variance for students' perceived importance of SOE in developing selected occupational abilities by occupational plans of students

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Appreciate the importance of honest work	7.36 / 1.85	7.57 / 1.59	7.65 / 1.92	.48
Develop acceptable personal and work habits	7.35 / 1.69	7.39 / 2.08	7.40 / 1.75	.02
Establish and maintain working relationships with others	7.22 / 1.79	7.22 / 2.33	7.09 / 1.89	.10
Maintain and use records and reports	7.45 / 1.49	6.35 / 2.14	6.91 / 2.18	3.69* (1>2[c])
Produce animals or animal products	7.65 / 1.56	6.17 / 2.51	6.34 / 2.50	9.17** (1>2,1>3)
Conserve soil, water, and other natural resources	7.12 / 1.92	6.39 / 2.13	6.43 / 2.41	2.33
Follow written directions and regulations	6.89 / 1.76	6.13 / 2.62	6.79 / 2.04	1.33
Identify and use new or improved practices in an agricultural occupation	6.96 / 1.59	6.04 / 2.50	6.52 / 2.10	2.39
Use labor, land, money, and other resources in farm operations	7.24 / 1.82	5.91 / 2.50	6.21 / 2.44	5.81** (1>2,1>3)

[a]Occupational abilities are listed in rank order for the total sample

[b]Subgroups were: Group 1 = students who planned to farm; Group 2 = students who planned to enter off-farm agricultural occupations; and Group 3 = students who planned to enter non-agricultural occupations

[c]Group means differed significantly at the .01 level

*Significant at the .05 level

**Significant at the .01 level

Table 7. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Realize that everyone can make a contribution to their occupation, family, community, and nation	6.56 / 1.97	6.61 / 1.90	6.81 / 1.90	.33
Use buildings and equipment in farm operations	6.94 / 1.93	6.87 / 2.30	6.23 / 2.32	2.21
Create and/or maintain a favorable home environment	6.90 / 2.04	5.78 / 2.21	6.57 / 2.47	2.30
Recognize employment opportunities in agriculture	6.65 / 1.61	6.91 / 2.02	6.43 / 1.98	.66
Recognize my abilities, talents, and interests in making employment plans	6.48 / 1.93	6.65 / 1.97	6.71 / 1.76	.30
Recognize and solve problems that develop in an agricultural occupation	6.95 / 1.63	5.61 / 2.25	6.40 / 2.02	5.50** (2>3,1>3)
Communicate effectively	6.73 / 2.12	6.52 / 2.25	6.26 / 2.21	.87
Market animals or animal products	7.13 / 1.69	5.78 / 2.95	5.96 / 2.63	6.28** (1>2,1>3)
Participate in activities to develop leadership skills	6.63 / 1.74	5.37 / 2.03	6.49 / 2.24	1.33
Explain the importance of agriculture	6.45 / 2.04	6.43 / 2.06	6.51 / 2.20	.02
Determine the opportunities for self-employment	6.89 / 1.74	6.48 / 2.23	5.94 / 2.00	4.68* (2>3,1>2)
Participate in activities and organizations that improve agriculture and the community	6.45 / 1.89	5.87 / 1.94	6.64 / 2.13	1.28
Produce crop products	7.06 / 2.05	5.82 / 2.52	5.85 / 2.55	5.94** (1>2,1>3)
Maintain customer relations	6.17 / 1.94	6.22 / 2.68	6.64 / 2.24	.95

Table 7. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Develop businesslike relationships with others	6.39 / 1.83	5.78 / 2.02	6.47 / 1.98	1.16
Finance farm operations	7.10 / 1.86	5.17 / 2.59	5.74 / 2.51	10.42** (1>2)
Utilize business policies and procedures	6.19 / 1.95	5.35 / 2.72	6.15 / 2.08	1.52
Market crop products	6.76 / 1.79	5.00 / 2.71	5.38 / 2.50	9.93** (1>2)
Apply and interview for a job	5.58 / 2.29	5.91 / 2.71	6.33 / 2.45	1.83
Handle and process farm products	6.29 / 1.92	5.26 / 2.67	5.68 / 2.33	2.63
Provide supplies and services to farmers	6.00 / 1.89	5.48 / 2.48	5.88 / 2.28	.54
Use information about agricultural occupations in making employment plans	5.94 / 1.78	5.87 / 2.22	5.77 / 2.00	.15
Use business practices in an off-farm agricultural occupation	5.55 / 2.14	5.70 / 2.36	5.88 / 2.22	.43
Use equipment in an off-farm agricultural occupation	5.56 / 2.08	6.09 / 2.54	5.49 / 2.30	.65
Use the services of agencies and organizations in securing employment	5.48 / 1.92	5.57 / 2.31	5.46 / 2.62	.02
Participate in the development of policies and programs affecting agriculture	5.83 / 2.01	4.61 / 2.04	5.26 / 2.07	3.73
Operate an off-farm agribusiness	5.13 / 1.96	5.48 / 2.59	5.60 / 2.27	.93
Use animal science information in an off-farm agricultural occupation	5.39 / 2.14	4.35 / 1.99	4.96 / 2.51	2.04

Table 7. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Use plant and soil science information in an off-farm agricultural occupation	5.18 / 2.19	4.61 / 1.78	5.00 / 2.47	.59

students who planned to enter a non-agricultural occupation for the following abilites: (1) produce animals or animal products; (2) use labor, land, money and other resources in farm operations; (3) recognize and solve problems that develop in an agricultural occupation; (4) market animal or animal products; and (5) produce crop products.

The means for students who planned to enter an off-farm agricultural occupation were significantly higher than students who planned to enter a non-agricultural occupation for two abilities. These abilities were: (1) recognize and solve problems that develop in an agricultural occupation; and (2) determine the opportunities for self-employment.

The five abilities with the highest means for the students who planned to farm were: (1) appreciate the importance of honest work; (2) produce animals or animal products; (3) maintain and use records and reports; (4) develop acceptable personal and work habits; and (5) establish and maintain working relationships with others.

The five occupational abilities receiving the highest means for students who planned to enter an off-farm agricultural occupation were: (1) appreciate the importance of honest work; (2) develop acceptable personal and work habits; (3) establish and maintain working relationships with others; (4) recognize employment opportunities in agriculture; and (5) use buildings and equipment in farm operations.

The group of students who planned to enter non-agricultural occupations placed the highest ratings for the importance of SOE in developing occupational abilities on the following abilities: (1) appreciate the importance of honest work; (2) develop acceptable personal and work habits; (3) establish and maintain working relationships with others; (4) recognize employment opportunities in agriculture; and (5) use buildings and equipment in farm operations.

The group of students who planned to enter non-agricultural occupations placed the highest ratings for the importance of SOE in developing occupational abilities on the following abilities: (1) appreciate the importance of honest work; (2) develop acceptable personal and work habits; (3) establish and maintain working relationships with others; (4) maintain and use records and reports; and (5) realize that everyone can make a contribution to their occupation, family, community, and nation.

Analysis by Educational Plans of Students

Means, standard deviations, and F-ratios for the abilities with students grouped by their educational plans are presented in Table 8. Significant differences were observed among the three groups of students on the perceived importance of SOE in developing occupational abilities for only three of the 38 abilities. Group 3, students who did not plan to attend college, had significantly higher means than Group 1, students who planned to attend an area school or community college, for the following abilities: (1) produce crop products; (2) handle and process farm products; and (3) provide supplies and services to farmers.

The mean for the students who did not plan to attend college was

Table 8

Means, standard deviations, and analysis of variance for students' perceived importance of SOE in developing selected occupational abilities by educational plans of students

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Appreciate the importance of honest work	7.20 / 2.07	7.12 / 2.13	7.51 / 1.87	2.50
Develop acceptable personal and work habits	7.21 / 2.05	6.88 / 1.84	7.61 / 1.50	2.59
Establish and maintain working relationships with others	7.10 / 2.06	6.68 / 2.11	7.36 / 1.69	1.74
Maintain and use records and reports	6.73 / 2.06	7.26 / 1.75	7.24 / 1.83	1.34
Produce animals or animal products	6.40 / 2.43	7.00 / 2.39	7.16 / 2.02	1.97
Follow written directions and regulations	6.63 / 2.11	6.47 / 1.94	6.94 / 1.93	0.91
Use labor, land, money, and other resources in farm operations	6.46 / 2.29	6.41 / 2.09	6.88 / 2.22	0.92
Identify and use new or improved practices in an agricultural operation	6.46 / 2.27	6.79 / 1.70	6.77 / 1.81	0.49
Realize that everyone can make a contribution to their occupation, family, community, and nation	6.77 / 2.08	6.03 / 1.57	6.85 / 1.97	2.37
Conserve soil, water, and other natural resources	6.13 / 2.47	6.47 / 1.89	7.01 / 2.06	2.98
Use buildings and equipment in farm operations	6.33 / 2.38	6.59 / 1.79	6.80 / 2.15	0.78

[a] Occupational abilities are rank ordered for the total sample

[b] Group 1= students who planned to enter an area vocational school or community college (N=46); Group 2 = students who planned to attend a four-year college or university (N=34); Group 3 = students who did not plan to attend college (N=103)

[c] Group means differed significantly at the .10 level

*Signficant at the .05 level

**Significant at the .01 level

Table 8. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
Create and/or maintain a favorable home environment	6.08 / 2.47	6.47 / 2.15	6.92 / 2.11	2.46
Recognize employment opportunities in agriculture	6.40 / 2.02	6.34 / 1.79	6.80 / 1.45	1.58
Recognize my abilities, talents, and interests in making employment plans	6.52 / 2.00	6.35 / 1.79	6.68 / 1.87	0.41
Recognize and solve problems that develop in an agricultural occupation	6.31 / 2.00	6.44 / 1.81	6.74 / 1.88	0.92
Market animals or animal products	6.31 / 2.59	6.44 / 1.89	6.71 / 2.34	0.52
Communicate effectively	6.61 / 2.31	6.62 / 1.69	6.50 / 2.24	0.06
Participate in activities to develop leadership skills	6.63 / 1.90	6.79 / 2.16	6.34 / 1.97	0.82
Explain the importance of agriculture	6.31 / 2.12	6.91 / 1.61	6.42 / 2.22	0.92
Determine the opportunities for self-employment	6.33 / 1.86	6.03 / 2.21	6.69 / 1.92	1.65
Participate in activities and organizations that improve agriculture and the community	6.38 / 1.86	6.41 / 1.92	6.52 / 2.09	0.11
Produce crop products	5.56 / 2.46	6.59 / 2.22	6.75 / 2.38	4.18* (3>1[c])
Develop businesslike relationships with others	6.29 / 2.12	6.15 / 1.70	6.46 / 1.86	0.38
Maintain customer relations	5.96 / 2.59	5.59 / 2.25	6.68 / 1.93	3.08
Finance farm operations	5.98 / 2.19	5.94 / 2.30	6.54 / 2.43	1.40
Utilize business policies and procedures	5.75 / 2.26	6.15 / 1.84	6.21 / 2.12	0.81

Table ". continued

Occupational Ability[a]	Group 1[b] Mean S.D.	Group 2[b] Mean S.D.	Group 3[b] Mean S.D.	F-ratio
Market crop products	5.35 2.58	5.97 2.26	6.27 2.25	2.52
Apply and interview for a job	6.06 2.35	5.41 2.36	6.05 2.43	1.00
Use information about agricultural occupations in making employment plans	5.98 2.04	5.56 1.86	5.95 1.92	0.60
Handle and process farm products	5.17 2.45	5.71 2.10	6.28 2.10	4.36* (3>1)
Provide supplies and services to farmers	5.44 2.39	5.06 2.09	6.29 1.98	5.54** (3>1,3>2)
Use business practices in an off-farm agricultural occupation	5.63 2.19	.12 2.25	5.62 2.20	0.70
Use equipment in an off-farm agricultural occupation	5.23 2.41	5.15 2.36	5.98 2.04	2.87
Use the services of agencies and organizations in securing employment	5.40 2.46	5.44 1.85	5.62 2.28	0.20
Participate in the development of policies and programs effecting agriculture	5.08 2.12	5.44 2.18	5.65 1.99	1.25
Operate an off-farm agribusiness	5.25 2.37	5.12 2.13	5.40 2.10	0.24
Use animal science information in an off-farm agricultural occupation	4.81 2.31	5.21 1.94	5.17 2.32	0.48
Use plant and soil science information in an off-farm agricultural occupation	5.60 2.05	5.24 2.03	5.13 2.42	1.08

significantly different than the mean for students who planned to attend a four-year college or university for one ability, "provide supplies and services to farmers."

There was similarity among the three groups in the occupational abilities with the highest means. The five abilities rated the highest by students who planned to enter an area school or community college were: (1) develop acceptable personal and work habits; (2) appreciate the importance of honest work; (3) establish and maintain working relationships with others; (4) realize that everyone can make a contribution to their occupation, family, community, and nation; and (5) maintain and use records and reports.

The highest means observed for students who planned to attend a four-year college or university were for the following occupational abilities: (1) maintain and use records and reports; (2) appreciate the importance of honest work; (3) produce animals or animal products; (4) explain the importance of agriculture; and (5) develop acceptable personal and work habits.

The five abilities receiving the highest ratings by students who did not plan to attend college were: (1) develop acceptable personal and work habits; (2) appreciate the importance of honest work; (3) establish and maintain working relationships with others; (4) maintain and use records and reports; and (5) produce animals or animal products.

Analysis by Home Location of Students

Table 9 reports the means, standard deviations, and F-ratios for the abilities with students grouped according to their home location. Significant differences were observed between the two groups on the

Table 9

Means, standard deviations, and analysis of variance for students' perceived importance of SOE in developing selected occupational abilities by home location of students

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	F-ratio
Appreciate the importance of honest work	7.49 / 1.85	7.64 / 1.97	.16
Develop acceptable personal and work habits	7.31 / 1.74	7.74 / 1.72	1.41
Establish and maintain working relationships with others	7.03 / 1.95	7.93 / 1.12	5.54*
Maintain and use records and reports	7.22 / 1.76	6.46 / 2.42	3.64
Produce animals or animal products	7.14 / 1.99	5.70 / 3.00	10.18**
Follow written directions and regulations	6.83 / 1.90	6.44 / 2.39	.87
Use labor, land, money, and other resources in farm operations	6.94 / 2.08	5.22 / 2.44	14.87**
Identify and use new or improved practices in an agricultural occupation	6.80 / 1.83	6.11 / 2.30	3.12
Conserve soil, water, and other natural resources	6.63 / 2.15	6.96 / 2.30	.53
Realize that everyone can make a contribution to their occupationa, family, community, and nation	6.58 / 1.96	7.25 / 1.78	2.88
Create and/or maintain a favorable home environment	6.54 / 2.24	7.11 / 2.18	1.55

[a]Occupational abilities are listed in rank order for the total sample

[b]Group 1 = students who lived on farms (N=156); Group 2 = students who did not live on farms (N=27)

*Significant at .05 level

**Significant at .01 level

Table 9. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	F-ratio
Use buildings and equipment in farm operations	6.65 / 2.10	6.57 / 2.47	.03
Recognize employment opportunities in agriculture	6.59 / 1.83	6.61 / 1.87	.00
Recognize my abilities, talents, and interests in making employment plans	6.50 / 1.94	7.04 / 1.43	1.88
Recognize and solve problems that develop in an agricultural occupation	6.59 / 1.85	6.44 / 2.17	.14
Market animals or animal products	6.69 / 2.12	5.79 / 2.81	3.68
Communicate effectively	6.45 / 2.24	7.14 / 1.54	2.45
Participate in activities to develop leadership skills	6.47 / 1.94	6.61 / 2.27	.11
Explain the importance of agriculture	6.53 / 2.01	6.22 / 2.52	.48
Determine the opportunities for self-employment	6.51 / 1.95	6.29 / 2.07	.32
Participate in activities and organiz-tions that improve agriculture and the community	6.46 / 1.92	6.50 / 2.40	.01
Produce crop products	6.66 / 2.22	4.93 / 2.95	12.71**
Develop businesslike relationships with others	6.36 / 1.86	6.33 / 2.15	.00
Maintain customer relations	6.30 / 2.18	6.54 / 2.38	.27
Finance farm operations	6.49 / 2.21	5.07 / 2.79	8.75*
Utilize business policies and procedures	6.11 / 1.99	5.89 / 2.71	.26

Table 9. continued

Occupational Ability[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	F-ratio
Market crop products	6.18 / 2.27	4.81 / 2.56	7.98**
Apply and interview for a job	5.92 / 2.36	6.00 / 2.61	.02
Handle and process farm products	5.94 / 2.17	5.59 / 2.63	.54
Use information about agricultural occupations in making employment plans	5.85 / 2.01	6.07 / 1.49	.30
Provide supplies and services to farmers	5.94 / 2.17	5.26 / 2.07	2.32
Use business practices in an off-farm agricultural occupation	5.71 / 2.21	5.70 / 2.20	.00
Use equipment in an off-farm agricultural occupation	5.59 / 2.19	5.89 / 2.41	.45
Use the services of agencies and organizations in securing employment	5.48 / 2.18	5.81 / 2.66	.51
Participate in the development of policies and programs affecting agriculture	5.53 / 2.04	5.07 / 2.18	1.14
Operate an off-farm agribusiness	5.34 / 2.12	5.14 / 2.46	.19
Use animal science information in an off-farm agricultural occupation	5.15 / 2.22	4.75 / 2.40	.74
Use plant and soil science information in an off-farm agricultural occupation	5.00 / 2.26	5.07 / 2.29	.02

perceived importance of SOE in developing 6 of the 38 abilities. The means for students who lived on farms were significantly higher than students who did not live on a farm for the following abilities: (1) produce animals or animal products; (2) use labor, land, money, and other resources in farm operations; (3) produce crop products; (4) finance

farm operations; and (5) market crop products.

The mean for students who did not live on a farm was significantly higher than students who lived on a farm for one ability; "establish and maintain working relationships with others."

The five abilities rated the highest by students living on farms were: (1) appreciate the importance of honest work; (2) develop acceptable personal and work habits; (3) maintain and use records and reports; (4) produce animals and animal products; and (5) establish and maintain working relationships with others.

The highest mean scores for students who did not live on farms were observed for the following occupational abilities: (1) establish and maintain working relationships with others; (2) develop acceptable personal and work habits; (3) appreciate the importance of honest work; (4) realize that everyone can make a contribution to their occupation, family, community, and nation; and (5) communicate effectively.

Importance of Factors in Developing SOE

Analysis by Last Type of SOE of Students

Table 10 presents the means, standard deviations, and F-ratios for the 18 factors when students were grouped according to their last SOE. There were significant differences among the three groups on the perceived importance in developing SOE for 6 of the 18 factors.

Students with responsibility SOE rated four factors significantly higher than students with ownership SOE; these being: (1) the help given me by my vocational agriculture teacher; (2) the training or experience plan developed for my SOE; (3) the evaluation activities carried out by myself

Table 10

Means, standard deviations, and analysis of variance for students' perceived importance of selected factors in developing their SOE by last type of SOE

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
My parents	7.68 / 1.48	7.76 / 1.62	7.75 / 1.64	0.03
My vocational agriculture classes	7.26 / 1.55	7.38 / 2.13	7.70 / 1.44	0.96
The wages and/or profits earned from SOE	7.06 / 1.43	7.15 / 1.70	6.44 / 2.31	2.67
The help given to me by my vocational agriculture teacher(s)	6.22 / 2.18	6.81 / 2.17	7.27 / 1.77	3.47* (3>1)[c]
The training or experience plan developed for my SOE	5.84 / 2.19	6.73 / 2.19	6.80 / 1.60	3.61* (3>1,2>1)
The goals established for my SOE	6.02 / 2.08	6.56 / 1.73	6.81 / 1.54	2.73
My FFA chapter activities	6.40 / 2.47	6.20 / 2.56	6.83 / 2.23	1.14
My fellow vocational agriculture students	6.15 / 2.09	6.36 / 2.18	6.50 / 1.96	0.37
The records that I kept on my SOE	6.34 / 1.89	6.19 / 2.34	6.12 / 2.16	0.13
The evaluation activities carried out by myself, my teacher(s), my employer(s), or others	5.35 / 2.19	6.53 / 1.93	6.39 / 1.65	5.80** (2>1,3>1)

[a]Factors are rank ordered for the total sample

[b]Group 1 = students with ownership SOE (N = 45); Group 2 = students with employment SOE (N = 73); and Group 3 = students with responsibility SOE (N - 65)

[c]Group means differed significantly at the .10 level

*Significant at the .05 level

**Significant at the .01 level

Table 10. (continued)

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
The agreement developed for my SOE	5.55 / 1.84	6.47 / 1.95	6.18 / 1.61	3.62* (2>1)
People working in agricultural businesses in the community (excluding parents and relatives)	5.71 / 1.92	6.45 / 2.19	5.92 / 2.01	2.10
My high school classes (excluding vocational agriculture)	5.82 / 2.25	6.12 / 2.39	6.12 / 1.90	0.31
The help given to me by my vocational agriculture teacher(s) through supervised visits to my SOE	5.02 / 2.55	6.13 / 2.60	6.21 / 2.01	3.82* (3>1,2>1)
Farmers in the community (excluding parents and relatives)	5.15 / 2.09	6.21 / 2.47	5.64 / 2.33	2.99
The guidelines and rules of the school and vo-ag department for SOE	5.31 / 2.43	5.73 / 2.33	6.60 / 1.94	1.22
My relatives (excluding parents)	4.97 / 2.40	5.10 / 2.75	5.21 / 2.57	0.11
County extension and/or 4-H personnel	4.50 / 2.83	4.18 / 2.58	5.31 / 2.57	3.21* (3>2)

my teacher(s), my employer(s), or others; and (4) the help given to me by my vocational agriculture teacher(s) through supervised visits to my SOE.

The means for students with employment SOE were significantly higher than the means for students with ownership SOE for the following factors: (1) the evaluation activities carried out by myself, my teacher(s), my employer(s), or others; (2) the training or experience plan developed for my SOE; (3) the agreement developed for my SOE; and (4) the help given to

me by my vocational agriculture teacher(s) through supervised visits to my SOE.

Students with responsibility SOE had a significantly higher mean score than students with employment SOE for one factor, "County extension and/or 4-H personnel."

The mean ratings for the importance of factors in developing SOE ranged from 4.18 to 7.68 among the students grouped according to their last type of SOE. The factors with the highest mean ratings by the ownership SOE group were: (1) my parents; (2) my vocational agriculture classes; (3) the wages and/or profits earned from SOE; (4) my FFA chapter activities; and (5) the records that I kept on my SOE.

Students' parents, their vocational agriculture classes, and the wages and/or profits they earned from SOE were also among the five factors with the highest mean for the employment SOE group. The other two factors within the top five were, "the help given to me by my vocational agriculture teacher(s)", and "the training or experience plan developed for my SOE."

The five factors with the highest mean ratings by the responsibility SOE group were: (1) my parents; (2) my vocational agriculture classes; (3) the help given to me by my vocational agriculture teacher(s); (4) my FFA chapter activities; and (5) the goals established for my SOE.

Analysis by Occupational Plans of Students

The means, standard deviations, and F-ratios for the 18 factors with the data analyzed according to occupational plans of students are reported in Table 11. The F-ratios observed were not significant at the .05 level. These findings revealed that no significant differences existed among

Table 11

Means, standard deviations, and analysis of variance for students' perceived importance of selected factors in developing their SOE by students' occupational plans

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
My parents	7.99 / 1.41	7.83 / 1.72	7.43 / 1.47	.10
My vocational agriculture classes	7.54 / 1.40	7.00 / 2.13	7.48 / 2.10	.82
The help given to me by my vocational agriculture teacher	6.77 / 1.91	6.68 / 2.12	7.06 / 2.15	.61
The wages and/or profits earned from my supervised occupational experience	6.96 / 1.86	6.74 / 1.84	6.78 / 2.01	.68
The trainingor experience plan developed for my supervised occupational experience program	6.44 / 2.00	6.30 / 1.89	6.71 / 2.18	.62
The goals established for my supervised occupational experience programs	6.58 / 1.76	6.17 / 2.08	6.52 / 1.71	.62
My FFA chapter activities	6.73 / 2.14	6.41 / 2.46	5.99 / 2.77	.17
My fellow vo-ag students	6.15 / 2.11	6.83 / 1.90	6.38 / 2.17	.39
The records that I kept on my supervised experience program	6.29 / 1.85	5.61 / 2.57	6.25 / 2.40	.40
The evaluation activities carried out by myself, my teachers, my employers or others	6.42 / 1.82	5.52 / 1.88	6.12 / 2.18	.15

[a]Factors are rank ordered for the total sample

[b]Group 1 = students who planned to farm; Group 2 = students who planned to enter off-farm agricultural occupations; Group 3 = students who planned to enter non-agricultural occupations

Table 11. continued

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
The agreement developed for my SOE	6.29 / 1.72	5.61 / 1.97	6.14 / 1.92	.29
People working in agricultural business in the community excluding parents and relatives	6.17 / 1.80	6.09 / 2.13	6.03 / 2.41	.47
My high school classes (excluding vocational agriculture)	5.75 / 2.24	6.04 / 2.22	6.36 / 2.16	.23
The help given to me by my vocational agriculture teacher	5.64 / 2.40	5.77 / 2.16	6.25 / 2.57	.32
Farmers in the community (excluding parents and relatives)	6.11 / 2.25	5.57 / 2.25	5.54 / 2.46	.29
The guidelines and rules of the school and vocational agriculture department	5.75 / 2.13	5.78 / 2.17	5.68 / 2.36	.22
My relatives (excluding parents)	5.28 / 2.53	4.70 / 2.79	5.12 / 2.65	.63
County extension and/or 4-H personnel	4.73 / 2.54	4.43 / 2.90	4.58 / 2.82	.60

students who planned to farm, students who planned to enter off-farm agricultural occupations and students who planned to enter non-agricultural occupations on the importance of the 18 factors in developing their SOE.

The mean ratings for the importance of factors in developing SOE ranged from 4.43 to 7.99 among the students grouped according to their occupational plans. Based on the mean scores, the three groups of students were in agreement on the four most important factors in developing their

SOE; these being: (1) my parents; (2) my vocational agriculture classes; (3) the help given to me by my vocational agriculture teacher; and (4) the wages and/or profits earned from my SOE.

Analysis by Educational Plans of Students

Table 12 summarizes the data when the 18 factors were analyzed according to the educational plans of students. Analysis of variance tests indicated that the difference among the mean scores for the three groups was not significant at the .05 level for any of the factors studied.

All of the mean ratings for the three groups on the importance of factors in developing SOE were above the mid-point on a nine-point scale. There was some similarity among the three groups in the factors with the highest means. The students who planned to enter an area school or community college rated the following factors the highest: (1) my parents; (2) my vocational agriculture classes; (3) the wages and/or profits earned from my supervised occupational experience; (4) my fellow vocational agriculture students; and (5) the training or experience plan developed for my supervised occupational experience program.

The five factors rated the highest by the students who planned to attend a four-year college or university were: (1) my parents; (2) my vocational agriculture classes; (3) the help given to me by my vocational agriculture teacher; (4) my FFA chapter activities; and (5) the wages and/or profits earned from my supervised occupational experience.

Students who did not plan to attend college indicated that the following factors were the most important in developing their SOE: (1) my parents; (2) my vocational agriculture classes; (3) the help

Table 12

Means, standard deviations, and analysis of variance for students' perceived importance of selected factors in developing their SOE by educational plans of students

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	Group 3[b] Mean / S.D.	F-ratio
My parents	7.90 / 1.69	7.56 / 1.35	7.77 / 1.62	.45
My vocational agriculture classes	7.08 / 2.16	7.79 / 1.09	7.55 / 1.73	1.84
The wages and/or profits earned from my supervised occupational experience	7.19 / 1.91	6.50 / 1.62	6.86 / 1.97	1.32
The help given to me by my vocational agriculture teacher(s)	6.50 / 2.17	7.06 / 1.76	6.93 / 2.10	.92
The training or experience plan developed for my supervised occupational experience program	6.58 / 2.09	6.09 / 2.04	6.70 / 1.99	1.18
The goals established for my supervised occupational experience program	6.42 / 1.84	6.29 / 1.87	6.62 / 1.71	.54
My FFA chapter activities	6.49 / 2.81	6.50 / 2.16	6.49 / 2.34	0.00
My fellow vo-ag students	6.60 / 2.12	6.24 / 1.52	6.32 / 2.20	.41
The evaluation activities carried out by myself, my teacher(s), my employer(s), or others	5.85 / 2.32	5.79 / 1.67	6.52 / 1.83	2.93
The records that I kept on my supervised occupational experience program	5.89 / 2.14	6.59 / 2.11	6.20 / 2.22	1.01

[a]Factors are rank ordered for the total sample

[b]Group 1 = students who planned to attend an area vocational school or community college N=46; Group 2 = students who planned to attend a four-year college or university N=34; Group 3 = students who did not plan to attend college (N=103)

Table 12. continued

Factor[a]	Group 1[b] Mean S.D.	Group 2[b] Mean S.D.	Group 3[b] Mean S.D.	F-ratio
The agreement developed for my supervised occupational experience program	5.85 2.02	5.76 1.78	6.39 1.73	2.33
People working in agricultural businesses in the community (excluding parents and relatives)	5.73 2.24	6.24 1.75	6.21 2.08	.98
My high school classes (excluding vocational agriculture)	5.73 2.16	6.21 1.93	6.14 2.27	.70
The help given to me by vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program	5.66 2.58	5.78 2.15	6.05 2.47	.45
Farmers in the community (excluding parents and relatives)	5.29 2.09	5.56 2.16	6.05 2.49	1.88
The guidelines and rules of the school and vo-ag department for SOE	5.77 2.19	5.41 1.96	5.84 2.33	.49
My relatives (excluding parents)	4.91 2.42	4.74 2.45	5.36 2.76	.92
County extension and/or 4-H personnel	4.74 2.84	4.74 2.34	4.58 2.72	.08

given to me by my vocational agriculture teacher(s); (4) the wages and/or profits earned from my supervised occupational experience; and (5) the training or experience plan developed for my supervised occupational experience program.

Analysis by Home Location of Students

The means, standard deviations, and F-ratios for the 18 factors when students were grouped according to those who lived on farms and those who did not live on farms are reported in Table 13. There was a significant difference among the two groups of students on the perceived importance of factors in developing SOE for only one of the 18 factors. The mean score of 7.08 for the students who did not live on farms was significantly higher at the .01 level than the mean score of 5.70 for the students who lived on farms for the factor, "the help given to me by my vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program." Thus, it may be concluded that students who did not live on farms perceive the importance of the individualized instruction provided through instructor visits to their SOE as being more important than students who lived on farms.

The five factors with the highest means for the on-farm group were: (1) my parents; (2) my vocational agriculture teacher; (3) the wages and/or profits earned from my supervised occupational experience; (4) the help given me by my vocational agriculture teacher; and (5) the training or experience plan developed for my supervised occupational experience program.

The five factors rated the most important (highest means) in developing their SOE by students who did not live on a farm were: (1) my parents; (2) my vocational agriculture classes; (3) the help given to me by my vocational agriculture teacher; (4) the help given to me by my vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program; and (5) the wages and/or profits earned from my supervised occupational experience.

Table 13

Means, standard deviations, and analysis of variance for students' perceived importance of selected factors in developing their SOE by home location of students

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	F-ratio
My parents	7.80 / 1.61	7.54 / 1.50	.67
My vocational agriculture classes	7.46 / 1.73	7.54 / 2.01	.04
The wages and/or profits earned from my supervised occupational experience	6.87 / 1.90	6.93 / 1.88	.85
The help given to me by my vocational agriculture teacher(s)	6.79 / 2.07	7.19 / 1.98	.85
The training or experience plan developed for my supervised occupational experience program	6.51 / 2.02	6.82 / 2.07	.55
The goals established for my supervised occupational experience program	6.51 / 1.76	6.54 / 1.84	.00
My FFA chapter activities	6.59 / 2.32	5.92 / 2.94	1.69
My fellow vo-ag students	6.32 / 2.01	6.68 / 2.41	.70
The evaluation activities carried out by myself, my teacher(s), my employer(s), or others	6.17 / 1.87	6.46 / 2.44	.53
The records that I kept on my supervised occupational experience program	6.18 / 2.13	6.30 / 2.49	.07
The agreement developed for my supervised occupational experience program	6.13 / 1.84	6.21 / 1.83	.05
People working in agricultural business in the community (excluding parents and relatives)	6.09 / 1.97	6.11 / 2.60	.00

[a]Factors are listed in rank order for the total sample

[b]Group 1 = students who lived on farms (N=156); Group 2 = students who did not live on farms (N=27)

Table 13. continued

Factor[a]	Group 1[b] Mean / S.D.	Group 2[b] Mean / S.D.	F-ratio
My high school classes (excluding vocational agriculture)	5.99 / 2.20	6.39 / 2.06	.82
The help given to me by vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program	5.70 / 2.43	7.04 / 2.19	7.32**
Farmers in the community (excluding parents and relatives)	5.66 / 2.35	6.32 / 2.31	1.88
The guidelines and rules of the school and vo-ag department for SOE	5.71 / 2.26	5.93 / 2.02	.22
My relatives (excluding parents)	5.05 / 2.65	5.57 / 2.46	.96
County extension and/or 4-H personnel	4.69 / 2.69	4.42 / 2.63	.23

**Significant at the .01 level.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was designed to identify selected personal characteristics of Iowa vocational agriculture students; to determine how important students thought their vocational agriculture supervised occupational experience (SOE) was in developing occupational abilities; and to determine how important students thought selected factors were in developing their SOE.

Iowa high school students enrolled in vocational agriculture and classified as seniors during the 1975-76 school year served as the population for this research. A stratified random sample of 300 students was identified to participate in the study. A total of 196 students responded to the data collection procedures. Since 13 of the students reported that they did not have SOE, the statistical tests were based on data provided by 186 students.

A three-part questionnaire was developed to collect personal data about the students; to determine how important students thought their SOE was in developing occupational abilities; and to determine how important selected factors were in developing their SOE. The data were collected by mailed questionnaire during April, May, and June 1976.

The data were analyzed to: (1) determine if significant relationships existed between selected personal characteristics of students and students' last type of SOE; (2) determine if significant differences existed in the perceived importance of SOE in developing occupational abilities among students grouped according to their last type of SOE, occupational plans, educational plans, and home location; and (3) determine if significant differences existed in the perceived importance of

selected factors in developing SOE among students grouped according to their last type of SOE, occupational plans, educational plans, and home location.

Conclusions

The conclusions of this study are as follows:

1. Almost all (93.6 percent) of the students participating in this study indicated that they had a vocational agriculture SOE program. Many of the students participated in several types of SOE while enrolled in vocational agriculture. Of the students who had SOE, 24.6 percent had ownership SOE as their last type of SOE, 39.9 percent had employment SOE, and 35.5 percent had responsibility SOE.
2. A chi-square analysis revealed that no significant relationship existed between students' educational plans after high school and their last type of SOE. One-fourth of the total sample of students planned to attend an area school or community college; 18.6 percent planned to attend a four-year college or university; and 56.3 percent did not plan to attend college, but to become employed or self-employed upon completion of high school.
3. Results of a chi-square analysis revealed that no significant relationship existed between students' occupational plans and their last type of SOE. Almost one-half (48.0 percent) of the total sample of students planned to enter farming; 13.3 percent planned to enter off-farm agricultural occupations; and 38.9 percent planned to enter non-agricultural occupations.

4. A significant relationship between students' home location and their last SOE was revealed by a chi-square analysis. It was found that 93.3 percent of the students with ownership SOE lived on farms, while 76.7 percent of the students with employment SOE, and 89.2 percent of the students with responsibility SOE lived on farms. When the total sample was considered, 85.2 percent of the students lived on farms.
5. A chi-square analysis disclosed a significant relationship between students' years of enrollment in vocational agriculture and their last type of SOE. It was observed that 87.7 percent of the students with responsibility SOE had been enrolled in vocational agriculture for four years. This compared to 68.9 percent of the students with ownership SOE, and 74.0 percent of the students with employment SOE who enrolled in vocational agriculture for four years.
6. Results of a one-way analysis of variance revealed that significant differences existed among the students with ownership, employment, and responsibility SOE on the importance of SOE in developing 13 of the 38 occupational abilities studied. Using the Scheffé Test, significant differences between all the possible pairs of group means were identified. The means for students with employment SOE were significantly higher than the means for students with ownership SOE for the following abilities:
    a. Establish and maintain working relationship with others.
    b. Recognize my abilities, talents, and interest in making employment plans.

c. Communicate effectively.

d. Develop businesslike relationships with others.

e. Maintain customer relationships.

f. Use equipment in an off-farm agricultural occupation.

h. Operate an off-farm agribusiness.

The means for students with responsibility SOE were significantly higher than the means for students with ownership SOE for the following abilities:

a. Establish and maintain working relationships with others.

b. Communicate effectively.

c. Participate in activities to develop leadership skills.

d. Participate in activities and organizations that improve agriculture and the community.

e. Use equipment in an off-farm agricultural occupation.

f. Use services of agencies and organizations in securing employment.

g. Use plant and soil science information in an off-farm agricultural occupation.

The mean for students with ownership SOE and students with responsibility SOE were significantly higher than the mean for students with employment SOE for one ability, "market animals or animal products."

7. There were no significant differences among the students group according to their last SOE on the importance of their SOE in developing occupational abilities for 25 of the 38 abilities studied. These findings suggest that ownership, employment, and

responsibility SOE may be equally potent in developing some occupational abilities.

8. A one-way analysis of variance disclosed that significant differences existed among the students grouped according to their occupational plans on the importance of SOE in developing 9 of the 38 abilities included in the investigation. The means for students who planned to farm were significantly higher than for students who planned to enter off-farm agricultural occupations for the following abilities:

    a. Maintain and use records and reports.
    b. Produce animals or animal products.
    c. Use labor, land, money, and other resources in farm operations.
    d. Market animals or animal products.
    e. Produce crop products.
    f. Finance farm operations.
    g. Market crop products.
    h. Determine the opportunities for self-employment.

    Students who planned to farm had significantly higher means than students who planned to enter non-agricultural occupations for the following abilities:

    a. Produce animals or animal products.
    b. Use labor, land, money, and other resources in farm operations.
    c. Recognize and solve problems that develop in an agricultural occupation.

d. Market animal or animal products.

e. Produce crop products.

The mean ratings on the importance of SOE in developing occupational abilities were significantly higher for students who planned to enter off-farm agricultural occupations than students who planned to enter non-agricultural occupations for two abilities. These were:

a. Recognize and solve problems that develop in an agricultural occupation.

b. Determine the opportunities for self-employment.

9. Students grouped by their educational plans differed significantly in their perceived importance of SOE in developing occupational abilities for only 3 of the 38 abilities studied. Students who did not plan to attend college had significantly higher means than students who planned to attend an area school or community college for the following abilities:

a. Produce crop products.

b. Handle and process farm products.

c. Provide supplies and services to farmers.

Students who did not plan to attend college rated the importance of one ability, "provide supplies and services to farmers," significantly higher than students who planned to attend a four-year college or university.

10. A one-way analysis of variance revealed that significant differences existed between students who lived on farms and students who did not live on farms on the importance of SOE in developing

6 of the 38 abilities. The mean ratings for students who lived on farms were significantly higher than students who did not live on farms for the following abilities:

a. Produce animals or animal products.

b. Use labor, land, and other resources in farm operations.

c. Produce crop products.

d. Finance farm operations.

e. Market crop products.

Students who did not live on farms rated the importance of one ability, "establish and maintain working relationships with others," significantly higher than students who lived on farms.

11. The analysis of variance revealed that significant differences existed among the students with ownership, employment, and responsibility SOE on the importance of selected factors in developing SOE for 6 of the 18 factors studied. The Scheffé Test was used to identify significant differences between all the possible pairs of group means. Students with responsibility SOE rated the following factors significantly higher than students with ownership SOE:

a. The help given to me by my vocational agriculture teacher.

b. The training or experience plan developed for my SOE.

c. The evaluation activities carried out by myself, my teacher(s), my employer(s), or others.

d. The help given to me by my vocational agriculture teacher through supervised visits to my SOE.

Ratings by students with employment SOE were significantly higher than ratings by students with ownership SOE for the following factors:

a. The evaluation activities carried out by myself, my teacher(s), my employer(s), or others.
b. The training or experience plan developed for my SOE.
c. The agreement developed for my SOE.
d. The help given to me by my vocational agriculture teacher through supervised visits to my SOE.

Students with responsibility SOE had a significantly higher mean score than students with employment SOE for one factor, "county extension and/or 4-H personnel."

12. A one-way analysis of variance revealed that no significant differences existed among students who planned to farm, students who planned to enter off-farm agricultural occupations, and students who planned to enter non-agricultural occupations in their ratings of the importance of the 18 factors studied in developing their SOE.

13. A one-way analysis of variance revealed that no significant differences existed among students grouped according to their educational plans in their ratings of the importance of the 18 factors studied in developing their SOE.

14. A one-way analysis of variance revealed a significant difference between students who lived on farms and students who did not live on farms on the importance of factors in developing their SOE for only one of the 18 factors studied. That factor was,

"the help given to me by my vocational agriculture teacher(s) through supervised visits to my SOE program." The group who did not live on farms had the highest mean rating for this factor.

Recommendations

The findings of this study revealed that relationships did exist between some personal variables and students last vocational agriculture supervised occupational experience (SOE). The investigation also revealed similarities and differences among groups of students on the importance of SOE in developing occupational abilities, and on the importance of factors in developing SOE. The following recommendations, preceded by findings of this study, appear worthy of consideration by national and state personnel responsible for establishing policies for vocational education in agriculture; by state and local personnel responsible for supervision and operation of vocational agriculture programs in local high schools; and by personnel responsible for preservice and inservice vocational agriculture teacher education.

1. Fifty-six percent of the students participating in this study indicated that they planned to get a job upon graduation from high school and not attend college.
    a. Preparing students for entry into an agricultural occupation should be a major focus of high school vocational agriculture.
    b. Supervised occupational experience should be a part of the high school vocational agriculture program to provide for specialized skill development and application, and to aid in transition of students from high school to employment or self-employment.

2. Almost one-half of the students participating in this study planned to enter farming as an occupation.
    a. The vocational agriculture curriculum should include systematic instruction to prepare students for production agriculture occupations.
    b. Students who plan to farm should have SOE programs that will develop abilities related to ownership and management of farm enterprises, and provide a means for students to become established in farming.
3. Thirteen percent of the students participating in this study planned to enter an off-farm agricultural occupation.
    a. The vocational agriculture program should include instruction to prepare students for off-farm agricultural occupations.
    b. Supervised occupational experience in agribusinesses should be provided for students who plan to seek employment in off-farm agricultural occupations.
    c. Students planning to enter off-farm agricultural occupations should be made aware of the abilities that can be developed through on-farm occupational experiences which will be useful in agribusiness.
4. Over one-third of the students participating in this study did not plan to enter an agricultural occupation.
    a. Students should receive agricultural occupations orientation experiences prior to or early in their vocational agriculture program.

b. High school programs other than vocational agriculture should be considered for students who do not plan to enter an agricultural occupation. This would allow the vocational agriculture teacher(s) time to work more intensively with students who plan to enter occupations in agriculture.

5. Twenty-five percent of the students participating in this study had ownership SOE as their last type of SOE; 40 percent had employment SOE; and 35 percent had responsibility SOE. Almost 94 percent of the total sample had some type of vocational agriculture SOE.

   a. Alternative types of SOE should be made available to students so they can select occupational experiences to match their interest and occupational plans.

   b. Vocational agriculture teachers should possess competencies in planning, conducting, and evaluating different types of SOE programs, including employment experiences provided through cooperative occupational education.

   c. Teaching outlines and materials should be developed and made available to vocational agriculture teachers for use in teaching students to select, plan, and conduct SOE programs.

6. Eighty-five percent of the students included in this study lived on a farm.

   a. Home farms of students should be utilized as sites where students can develop occupational abilities needed for

entry into farm and off-farm agricultural occupations. (Eighty-five percent of the students in this study lived on a farm, but only 25 percent had ownership SOE, the type of SOE normally conducted on the student's home farm.)

b. School and community resources should be utilized to provide occupational experience for students with limited home resources for their SOE.

7. Students indicated that their SOE was important in developing occupational abilities. (Almost all ratings were above mid-point on a nine-point scale.)

   a. All students in vocational agriculture should have a SOE program.

   b. Instructors should include in their program of study instruction on selecting, planning, and conducting SOE for beginning vocational agriculture students.

8. Significant differences existed among the students with ownership, employment, and responsibility SOE on the importance of SOE in developing some occupational skills.

   a. The types of occupational abilities a student desires to develop should be considered in choosing a SOE program.

   b. SOE programs should be planned to develop predetermined occupational abilities.

9. Significant differences existed among students grouped according to their educational plans on the importance of SOE in developing some occupational abilities.

a. The occupational plans of students should be considered in selecting and planning SOE programs.

b. Students should be guided in making a tentative occupational choice as part of the procedures for selecting a SOE program.

c. The abilities recognized as being important in the occupation a student plans to enter should be considered in SOE selection and planning.

10. Students indicated that selected factors are important in developing SOE programs. (Almost all ratings were above mid-point on a nine-point scale.)

a. Teachers should possess competencies in activating and utilizing factors that support the development of students' SOE programs.

b. Instructional materials developed for use in teaching students to select and plan their SOE programs should suggest ways to effectively utilize factors that support the development of students' SOE programs.

11. Students in various types of SOE are influenced by different factors when developing their SOE. (Significant differences existed among students grouped according to their last type of SOE on the importance of some factors in developing SOE programs.)

a. The factors that influence students with a particular type of SOE should be activated in planning and conducting that type of SOE.

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APPENDIX A. QUESTIONNAIRE

Iowa State University
Ames, Iowa

Survey on Supervised Occupational Experience in Vocational Agriculture

Informed Consent of Participants

I voluntarily agree to participate in this survey on supervised occupational experience in vocational agriculture which is being conducted by the Department of Agricultural Education, Iowa State University.

I understand that the purpose of the research is to develop and improve vocational agriculture education, and that my only responsibility is to complete this survey form. I further understand that the information which I provide will be held in confidence, and that my responses will be combined with other responses and reported only in group summary form.

(Date) _____ _____ (Signature of participant)

Parent/Guardian Consent (not required if participant is 18 years of age or older.)

My son/daughter, _____, has my permission to complete this survey form.
(name)

(Date) _____ _____ (Signature of Parent/Guardian)

PART I

Directions: Please answer each question. Where there are brackets ( ), mark an "x" by the response which **best** describes your situation. Where a line is provided, write your response.

1. How many years of high school vocational agriculture have you completed (including this year)?
   1. ( ) one year
   2. ( ) two years
   3. ( ) three years
   4. ( ) four years
2. Where did you live while attending high school?
   1. ( ) on a farm
   2. ( ) in the rural area, but not on a farm
   3. ( ) in a town or city
3. What occupation (job) do you plan to enter upon completion of your formal education? _____
4. What kinds of activities did you participate in during high school (check all that apply)?
   1. ( ) athletics
   2. ( ) FFA
   3. ( ) music
   4. ( ) student government
   5. ( ) 4-H
   6. ( ) other _____
5. What are your immediate plans upon completion of high school?
   1. ( ) attend an area vocational school or community college
   2. ( ) attend a four-year college or university
   3. ( ) work for myself (self-employed)
   4. ( ) get a full-time job
   5. ( ) other (describe) _____

6. What kind(s) of supervised occupational experience did you have as part of your vocational agriculture program? (Check all that apply)
   1. ( ) raising animals and/or crops
   2. ( ) working on a farm other than home farm
   3. ( ) working in an off-farm agricultural business
   4. ( ) working with projects carried out using school land, greenhouse, shop, or other school facilities. (Experiences that occur outside of normal classroom and shop activities.)
   5. ( ) interviewing and observing people working in agriculture
   6. ( ) other (describe) _____
   7. ( ) none (I did not have a supervised occupational experience program.)

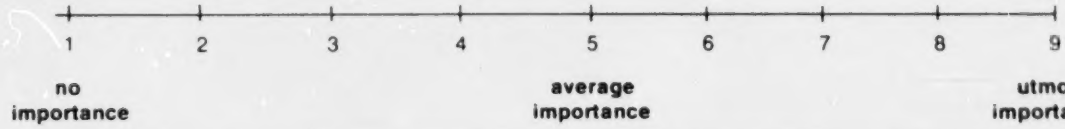
7. (Answer this question only if you checked more than one kind of experience for question 6.) Indicate the order in which you had the experiences checked in question 6 by writing "1" in the blank preceding your first experience, "2" in the blank preceding your second experience, etc.
   _____ 1. raising animals and/or crops
   _____ 2. working on a farm other than home farm
   _____ 3. working in an off-farm agricultural business
   _____ 4. working with projects carried out using school land, greenhouse, shop or other school facilities
   _____ 5. interviewing and observing people working in agriculture
   _____ 6. other

8. Indicate the number of years you were involved in each kind of supervised occupational experience by writing "0", "1", "2", "3", or "4" in the blank preceding each of the following:
   _____ 1. raising animals and/or crops
   _____ 2. working on a farm other than home farm
   _____ 3. working in an off-farm agricultural business
   _____ 4. working with projects carried out using school land, greenhouse, shop or other school facilities
   _____ 5. interviewing and observing people working in agriculture
   _____ 6. other

PART II

Directions: Each of the following items indicates an ability which you may or may not possess. Respond to each item in terms of how important you think your supervised occupational experience (SOE) in vocational agriculture was in developing each ability. If you feel your SOE was of utmost importance in developing the ability, write "9" on the line in front of the item. If you feel your SOE was of no importance, write "1" on the line. Use **any number** between 1 and 9 to indicate how important your SOE was in developing each ability. Please respond to each item. If you did not have supervised occupational experience in vocational agriculture, please return without completing Parts II and III.

When responding to the items below, please use the following scale:



Importance of my supervised occupational experience in developing my ability to:

_____ 1. Produce animals or animal products.
_____ 2. Use business practices in an off-farm agricultural occupation.
_____ 3. Recognize employment opportunities in agriculture.
_____ 4. Realize that everyone can make a contribution to their occupation, family, community, and nation.
_____ 5. Participate in activities to develop leadership skills.
_____ 6. Participate in the development of policies and programs affecting agriculture.
_____ 7. Produce crop products.
_____ 8. Use equipment in an off-farm agricultural occupation.
_____ 9. Use animal science information in an off-farm agricultural occupation.
_____ 10. Use information about agricultural occupations in making employment plans.
_____ 11. Establish and maintain working relationships with others.
_____ 12. Participate in activities and organizations that improve agriculture and the community.
_____ 13. Market animals or animal products.
_____ 14. Use plant and soil science information in an off-farm agricultural occupation.

_____ 15. Handle and process farm products.
_____ 16. Recognize my abilities, talents, and interests in making employment plans.
_____ 17. Communicate effectively.
_____ 18. Finance farm operations.
_____ 19. Recognize and solve problems that develop in an agricultural occupation.
_____ 20. Identify and use new or improved practices in an agricultural occupation.
_____ 21. Explain the importance of agriculture.
_____ 22. Use the services of agencies and organizations in securing employment.
_____ 23. Appreciate the importance of honest work.
_____ 24. Develop acceptable personal and work habits.
_____ 25. Use buildings and equipment in farm operations.
_____ 26. Create and/or maintain a favorable home environment.
_____ 27. Provide supplies and services to farmers.
_____ 28. Follow written directions and regulations.
_____ 29. Determine the opportunities for self-employment.
_____ 30. Market crop products.
_____ 31. Use labor, land, money, and other resources in farm operations.
_____ 32. Apply and interview for a job.
_____ 33. Maintain customer relations.
_____ 34. Conserve soil, water, and other natural resources.
_____ 35. Operate an off-farm agribusiness.
_____ 36. Develop businesslike relationships with others.
_____ 37. Utilize business policies and procedures.
_____ 38. Maintain and use records and reports.

PART III

Directions: Using the same scale and response procedure as used in Part II, please indicate how important you feel that each of the following was in planning and/or conducting your supervised occupational experience (SOE) programs. Please respond to each item.

_____ 1. My FFA chapter activities.
_____ 2. My vocational agriculture classes.
_____ 3. My high school classes (excluding vocational agriculture).
_____ 4. The goals established for my supervised occupational experience program.
_____ 5. The agreement developed for my supervised occupational experience program.
_____ 6. The help given to me by my vocational agriculture teacher(s).
_____ 7. My parents.
_____ 8. My relatives (excluding parents).
_____ 9. The records that I kept on my supervised occupational experience program.
_____ 10. People working in agricultural businesses in the community (excluding parents and relatives).
_____ 11. County extension and/or 4-H personnel.
_____ 12. Farmers in the community (excluding parents and relatives).
_____ 13. The guidelines and rules of the school and vo-ag department for SOE.
_____ 14. The evaluation activities carried out by myself, my teacher(s), my employer(s), or others.
_____ 15. The wages and/or profits earned from my supervised occupational experience.
_____ 16. My fellow vo-ag students.
_____ 17. The help given to me by vocational agriculture teacher(s) through supervised visits to my supervised occupational experience program.
_____ 18. The training or experience plan developed for my supervised occupational experience program.
_____ 19. other _____

NOTE: Thank you for your help by completing this survey. Please fold, tape or staple closed and return by mail. No stamp is needed.

APPENDIX B. COVER LETTERS FOR QUESTIONNAIRE

(Letters were personalized to the selected students.)

Iowa State University *of Science and Technology* *Ames, Iowa 50010*

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

April 19, 1976

I understand that you will graduate from high school this spring and that you are currently enrolled in a vocational agriculture class. Because you are a high school senior in vocational agriculture, I am asking that you participate in a survey to help develop and improve the supervised occupational experiences which many high school students get through vocational agriculture. Will you please help by completing the enclosed survey?

Supervised occupational experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Some people may refer to such experience as a student's FFA projects. There are several kinds of SOE programs, including farming programs, placement-employment programs, experiences which utilize school greenhouses or school farms, and others. All of these may be called supervised occupational experience (SOE) programs when performed in addition to regular class activites.

Please read the informed consent statement at the beginning of the survey and sign your name. If you are under 18 years of age, one of your parents/guardians must also sign after reading the informed consent statements. You may call 515/294-5872 if you have questions concerning your participation in the survey.

Please complete the survey carefully and honestly, following the directions for each part. The completed survey can be folded and returned by mail.

Thank you for your help to further develop and improve SOE programs.

Sincerely,

David L. Williams

David L. Williams
Associate Professor
Agricultural Education

DLW/lra
Encl.
cc:

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

May 5, 1976

As of this date, I have not received a response from you on the survey we sent to you about two weeks ago regarding supervised occupational experience in vocational agriculture. Since you were randomly selected from among all Iowa high school seniors enrolled in vocational agriculture, your participation is again requested.

To insure your participation in this activity to develop and improve the occupational experience which many students get through vocational agriculture, I am enclosing another copy of the survey. Please complete it today following the directions for each part. The completed survey can be folded and returned by mail.

Supervised occupational experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Some people may refer to such experience as a student's FFA projects. There are several kinds of SOE programs, including farming programs, placement-employment programs, experiences which utilize school greenhouses or school farms, and others. All of these may be called supervised occupational experience (SOE) programs when performed in addition to regular class activities.

Please read the informed consent statement at the beginning of the survey and sign your name. If you are under 18 years of age, one of your parents/guardians must also sign after reading the informed consent statements. You may call 515/294-5872 if you have questions concerning your participation in the survey.

Thank you for your help to further develop and improve SOE programs.

Sincerely,

David L. Williams
Associate Professor
Agricultural Education

DLW/lra
Encl.

Iowa State University of Science and Technology Ames, Iowa 50010

MANY HAVE HELPED AND ARE
GLAD THEY DID!!

Department of Agricultural Education
223 Curtiss Hall
Telephone 515 294 5872
May 19, 1976

Will you please fill out the enclosed survey and help improve SOE programs. Supervised occupational experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Some people may refer to such experience as a student's FFA projects. There are several kinds of SOE programs, including farming programs, placement-employment programs, experiences which utilize school greenhouses or school farms, and others. All of these may be called supervised occupational experience (SOE) programs when performed in addition to regular class activities.

Please read the informed consent statement at the beginning of the survey and sign your name. If you are under 18 years of age, one of your parents/guardians must also sign after reading the informed consent statements. You may call 515/294-5872 if you have questions concerning your participation in the survey.

Please make your contribution by filling out the enclosed survey and returning it by mail as soon as possible. Your help is very much appreciated.

Sincerely,

David L. Williams
Associate Professor
Agricultural Education

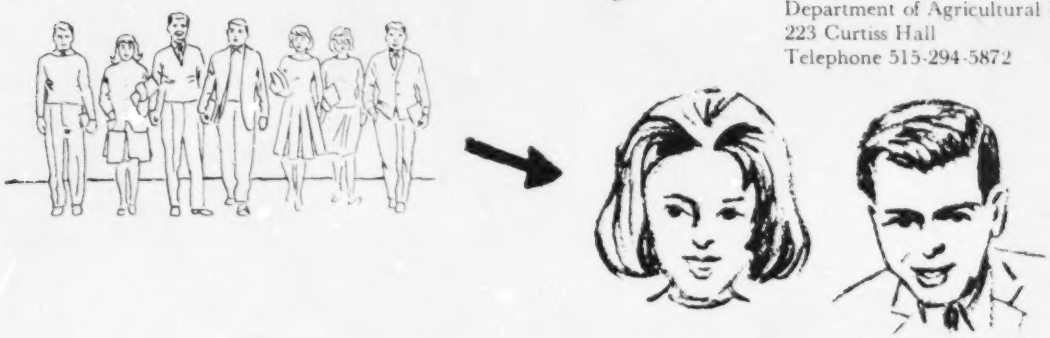
DLW/lra

REMEMBER
HOW YOU VIEW THESE
IS IMPORTANT!

Iowa State University of Science and Technology Ames, Iowa 50010

Department of Agricultural Education
223 Curtiss Hall
Telephone 515-294-5872

June 2, 1976



Do you realize that you were selected at random from all the 1976 high school seniors in Iowa who were enrolled in vocational agriculture to participate in this survey? That's why your response is extremely important. We want your input and need your immediate contribution. Please fill out the enclosed survey and know that you have helped to improve vocational agriculture programs.

Supervised occupational experience (SOE) may be defined as a vocational agriculture student's planned participation in one or more agricultural occupations. Some people may refer to such experience as a student's FFA projects. There are several kinds of SOE programs, including farming programs, placement-employment programs, experiences which utilize school greenhouses or school farms, and others. All of these may be called supervised occupational experience (SOE) programs when performed in addition to regular class activities.

Please read the informed consent statement at the beginning of the survey and sign your name. If you are under 18 years of age, one of your parents/guardians must also sign after reading the informed consent statements. You may call 515/294-5872 if you have questions concerning your participation in the survey.

Remember, your response will make a difference, and your opinions are important. You were selected to "speak" for your fellow vo-ag students across the state. Don't let them down. Please fill out the enclosed survey and return by mail as soon as possible. You'll be glad you did! Thank you for your help.

Sincerely,

David L. Williams
Associate Professor
Agricultural Education

DLW/lra

Encl.

YOU HAVE BEEN
SELECTED TO
SPEAK!!

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